

ECHO Science Metadata Data Model
version 6.0

ECHO Project
GST
10/29/2004

Table of contents

Abstract	5
Introduction	6
Purpose	6
Organization of Document	6
Definitions	7
Table 2-3. Cardinality Definitions	8
Relationship list	8
Model level diagrams	9
Diagram Diagram_1	9
Entity list	10
Entities	14
Model level entities	14
Entity AalysisSource	14
Entity AdditionalAttributes	14
Entity AlgorithmPackage	16
Entity AltitudeResolution	17
Entity AssociatedDIFs	18
Entity BoundingRectangle	18
Entity BrowseCrossReference	19
Entity CSDTDescription	20
Entity Campaign	21
Entity Circle	22
Entity CollReview	22
Entity CollectionAssociation	23
Entity CollectionAttributeMapping	23
Entity CollectionHorizontalSpatialDomain	24
Entity CollectionInstrumentCharacteristic	24
Entity CollectionInstrumentOperationMode	25
Entity CollectionLocality	26
Entity CollectionMetaData	26
Entity CollectionOnlineAccessURLs	30
Entity CollectionOnlineResources	31
Entity CollectionPlatform	32
Entity CollectionPlatformInstrument	32
Entity CollectionPlatformInstrumentSensor	33
Entity CollectionSensorCharacteristic	33
Entity CollectionSpatial	34
Entity CollectionVerticalSpatialDomain	35
Entity Contact	35
Entity ContactOrganizationAddress	36
Entity ContactPersons	37
Entity DataGranule	38
Entity DepthResolution	39
Entity DisciplineKeyword	39
Entity DisciplineTopicParameters	40
Entity FileStorage	41
Entity GranuleAdditionalAttributes	41
Entity GranuleHorizontalSpatialDomain	42
Entity GranuleHorizontalSpatialDomainGlobal	42
Entity GranuleInstrumentCharacteristic	42
Entity GranuleLocality	43
Entity GranuleOnlineResources	43
Entity GranulePlatform	44
Entity GranulePlatformInstrument	45
Entity GranulePlatformInstrumentSensor	45
Entity GranuleSensorCharacteristic	46
Entity GranuleSpatialDomain	46
Entity GranuleSpatialInheritance	47
Entity GranuleSpatialRepresentation	47
Entity GranuleURMetaData	47
Entity GranuleVerticalSpatialDomain	50

Entity Grid	51
Entity HorizontalSpatial.....	52
Entity InnerRing	52
Entity InputGranule.....	53
Entity Instrument.....	53
Entity Line	54
Entity MeasuredParameter	54
Entity OnlineAccessURLs	55
Entity Orbit	55
Entity OrbitCalculatedSpatialDomain	56
Entity OrbitParameters	57
Entity OrganizationEmail	58
Entity OrganizationTelephone	58
Entity OuterRing.....	59
Entity PGEVersionClass.....	59
Entity PHProduct	60
Entity PROVIDER_INFO	60
Entity ParameterKeyword	61
Entity PeriodicDateTime	62
Entity PlanarCoordinateSystem	63
Entity Platform.....	65
Entity PlatformCharacteristic.....	66
Entity Point.....	67
Entity Polygon	67
Entity ProcessingQA	68
Entity QAFlags	68
Entity QAProduct	69
Entity QAStats	70
Entity RangeDateTime	70
Entity Review.....	71
Entity SSAPComponent	72
Entity Sensor	72
Entity SingleDateTime	73
Entity SpatialInfo.....	74
Entity SpatialKeyword	76
Entity StorageMedium.....	76
Entity StorageMediumClass.....	76
Entity Temporal.....	77
Entity TemporalKeyword	78
Entity VersionHistory	78
Model level object lists	80
Data item list.....	80
Relationship list.....	87
Association CollectionBrowseReference	89
Description of association CollectionBrowseReference	89
Link list of association CollectionBrowseReference	89
Attribute list of association CollectionBrowseReference	89
Attribute BrowseGranuleId of association CollectionBrowseReference.....	89
Description of attribute BrowseGranuleId of association CollectionBrowseReference.....	89
Association CollectionGridPSAMapping	89
Link list of association CollectionGridPSAMapping	89
Attribute list of association CollectionGridPSAMapping	89
Attribute GridType of association CollectionGridPSAMapping	89
Description of attribute GridType of association CollectionGridPSAMapping	89
Association GranuleBrowseReference	89
Description of association GranuleBrowseReference.....	89
Link list of association GranuleBrowseReference	89
Attribute list of association GranuleBrowseReference.....	89
Attribute BrowseGranuleId of association GranuleBrowseReference	89
Description of attribute BrowseGranuleId of association GranuleBrowseReference	89
Attribute GranuleUR of association GranuleBrowseReference.....	90
Association GranuleCollectionMetaData	90
Description of association GranuleCollectionMetaData.....	90
Link list of association GranuleCollectionMetaData	90

Attribute list of association GranuleCollectionMetaData.....	90
Attribute DatasetID of association GranuleCollectionMetaData.....	90
Description of attribute DatasetID of association GranuleCollectionMetaData	90
Attribute ShortName of association GranuleCollectionMetaData	90
Description of attribute ShortName of association GranuleCollectionMetaData.....	90
Attribute Version of association GranuleCollectionMetaData	90
Description of attribute Version of association GranuleCollectionMetaData	90

Abstract

This document contains the ECHO Earth Science Metadata Conceptual Model, which organizes and describes the metadata for the Earth Science community. The ECHO Science Metadata Conceptual Model is developed based on Earth Observation System Data and Information Core System (ECS) Science Data Model. Modifications of the original ECS-based model have been necessary. The interfaces users have to the ECHO Earth Science Metadata Conceptual Model are through the ingest mechanism (for granules, collections/datasets and browse) and the query results mechanism. The audience for the ingest mechanism is Data Partners (Providers) and the audience for results is Client Partners (Providers). This document includes a diagram that graphically illustrates the relationships between entities. The diagram and specifications are produced using Power Designer based on Entity Relationship Diagram (ERD) representation.

Introduction

Purpose

The purpose of this document is to illustrate, specify, and communicate the design of the ECHO Earth Science Metadata Conceptual Model (EESMCM). This documentation represents the Iteration 6.0 implementation design of the ECHO EESMCM. The EESMCM represented in this document is a practical means of supporting the data standardization necessary for interoperability within a heterogeneous open systems environment. Data Partners benefit by understanding the format of metadata to be provided through the ingest mechanism. Client Partners benefit by understanding the format of metadata that is received as a result of querying the registry of granule and collection (dataset) metadata.

Organization of Document

This document is organized as described below:

The model level diagrams section contains an ER diagram that depicts the entire EESMCM. A web based version will be available with hyperlinks from the tables in the diagram to the detailed description of the tables.

The following material is the detailed information for each entity. A more detailed annotation of the table is first, followed by a list of the primary keys for the table. The relationship list is a textual version of the information conveyed in the ER diagram with the specifics of each relationship in which that table is involved. Next is a list of the attributes along with their data type information. Finally, there is a detailed description of each attribute.

The last section (entity list) contains a list of all the entities with brief descriptions of each, a list of all attributes with data type indication, and a list of all entity relationships description.

Definitions

Table 2-1. Attribute Data Type Definitions

Code in this file	Data type in Oracle	Explanation
N	NUMBER	A number field stores either an integer or a floating number. ECHO use this data type to store integer number for all the columns serve as a numerical identifier
VAn	VARCHAR2(n)	Variable length character string with maximum length of n
Nn,m	NUMBER(n,m)	Floating number with total of n digits and m digits after decimal point
DT	DATE	Oracle date type including date and time to the seconds. Default presentation of the DATE type is a string of the date such as '01-JAN-02'
SDOGEOBJ	MDSYS.SDOGEOM	Oracle spatial object type. This object type contains the definition and data pointers of latitude/longitude pair of a special area. The definition including the special area shape (e.g. line, circle, polygon etc.) specification, coordinate system specification (e.g. Cartesian coordinate system, Geodetic coordinate system). The data pointers of latitude/longitude pair describes a spatial area (e.g. polygon boundary)

Table 2-2. Relationship Definitions

Relationship Expression	Relationship Definition
<pre> graph LR A[A] -->0--> B[B] style A fill:#008000,stroke:#000 style B fill:#008000,stroke:#000 </pre>	<p>Each instance in B may have 0 or more child instance in A.</p> <p>Each instance in A must have and only have one parent instance in B.</p> <p>In Entity Relation term, the relationship from B to A is ZERO to MANY.</p>
<pre> graph LR A[A] -->1--> B[B] style A fill:#008000,stroke:#000 style B fill:#008000,stroke:#000 </pre>	<p>Each instance in B may have 1 or more child instance in A.</p> <p>Each instance in A must have and only have one parent instance in B.</p> <p>In Entity Relation term, the relationship from B to A is ONE to MANY.</p>
<pre> graph LR A[A] -->0..1--> B[B] style A fill:#008000,stroke:#000 style B fill:#008000,stroke:#000 </pre>	<p>Each instance in B may have 0 or more child instance in A.</p> <p>Each instance in A must have and only have one parent instance in B.</p> <p>Parent/Child pair in A is unique.</p>

Table 2-3. Cardinality Definitions

Cardinality Expression Entity 2 -> Entity 1 Role Cardinality	Definition
1,1	One instance of the first entity can correspond to only one instance of the second entity
1,n	One instance of the first entity can correspond to more than one instance of the second entity
n,1	More than one instance of the first entity can correspond to the same one instance of the second entity
n,n	More than one instance of the first entity can correspond to more than one instance of the second entity
0,1	One instance of the first entity can correspond to only one instance of the second entity. The association is not mandatory
0,n	One instance of the first entity can correspond to more than one instance of the second entity. The association is not mandatory

- Note:

Cardinality indicates the number of occurrences (zero, one or many) that one entity has relative to another. To fully understand the relationship between two entities, one should examine the cardinality from both directions: entity1 -> entity2 and entity2->entity1.

For example, the table below shows the cardinality between the entity of COLL_AP_XREF and the entity of ALGORITHM_PACKAGE. One instance in entity ALGORITHM_PACKAGE could correspond to 0 to many instances in entity COLL_AP_XREF. One instance in entity COLL_AP_XREF must have one and only one corresponding instance in entity ALGORITHM_PACKAGE. Thus, the relationship between entity ALGORITHM_PACKAGE and the entity COLL_AP_XREF is ONE to MANY.

PowerDesigner generates this information based on table constraint definition (ER model).

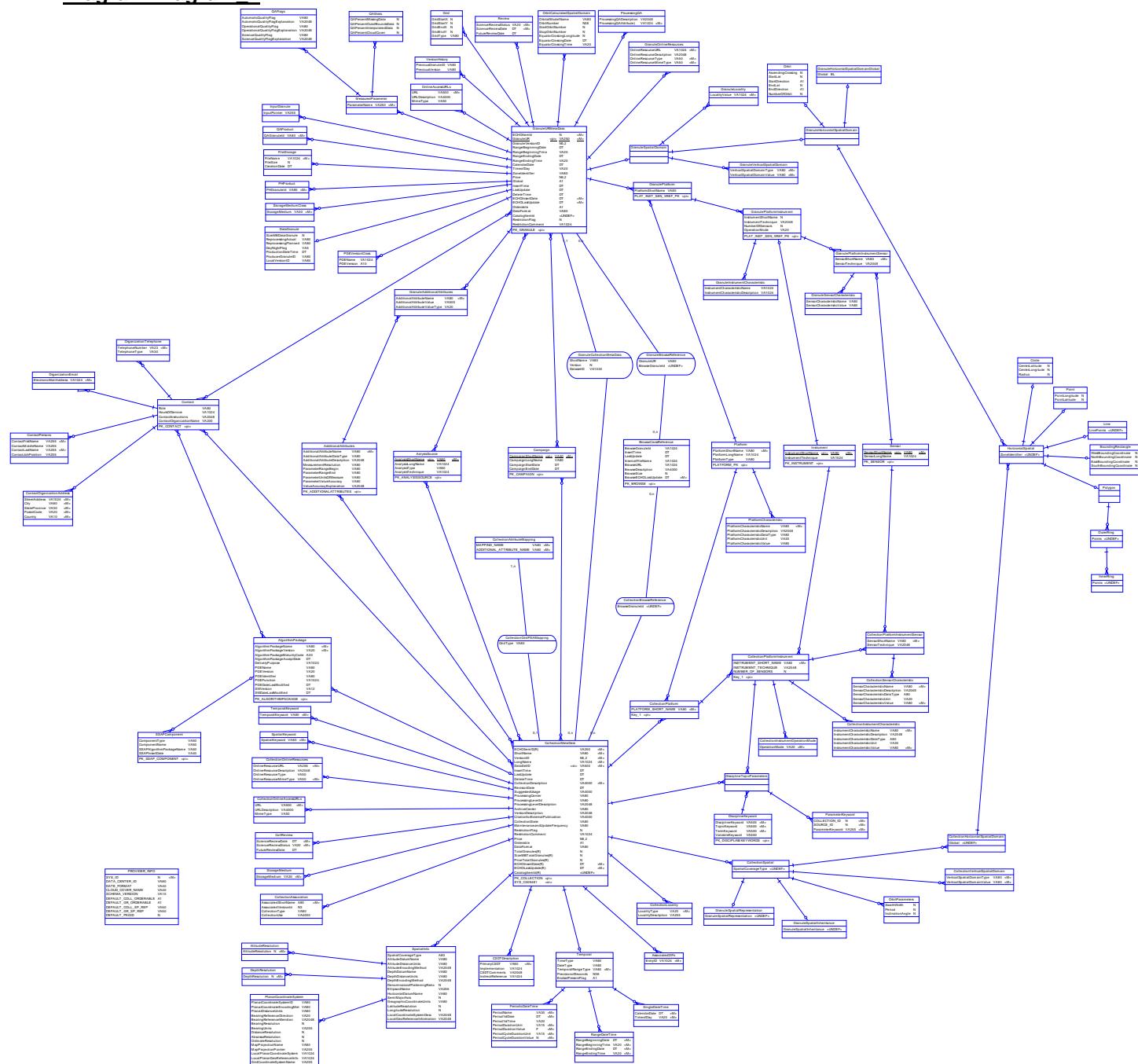
Relationship list

Entity 2	Entity 1	Entity 2 -> Entity 1 Role Cardinality	Entity 1 -> Entity 2 Role Cardinality
COLL_AP_XREF	ALGORITHM_PACKAGE	0,n	1,1

1 CDM Diagrams

1.1 Model level diagrams

1.1.1 Diagram Diagram_1



2 Entity list

Name	Comment
AdditionalAttributes	The entity registers unique PSA (Product Specific Attributes) definition and characters.
AltitudeResolution	Holds the information for altitude measurement system
BrowseCrossReference	This entity records browse file information including file size, file location, file URL, file system identification etc.
Campaign	This entity holds campaign information
CollectionMetaData	This entity contains basic information and aggregated information of collections.
CollectionAssociation	This entity is used to describe collections associated with the instance of a collection; i.e., the name and other details of input collections, collections associated (in science data terms) with the instance and/or collections dependent on the collection in some way.
DisciplineTopicParameters	This entity holds cross reference between collections and discipline keywords.
CollectionOnlineResources	This entity records the documentation information of the collection including documentation type and documentation URL where apply etc.
CollectionOnlineAccessURLs	This entity stores online URL for the collections if there is any.
PlanarCoordinateSystem	This entity stores collections' coordinate system reference information.
RangeDateTime	This entity stores the start and end date/time of a collection.
PeriodicDateTime	This entity stores the name of the temporal period in addition to the date, time, duration unit, and value, and cycle duration unit and value.
CollReview	This entity stores science review dates and status as applicable for collections, which are active.
SingleDateTime	This entity stores the time of day and calendar date for an ECS collection temporal frame if all the granules in the collection covers a single day.
SpatialInfo	This entity stores collections' geometry reference information.
SpatialKeyword	This entity contains the spatial keywords associated with the collection.
Temporal	This entity contains records, which describe the basis of the time system used for a specific collection.
TemporalKeyword	This entity identifies the type of temporal characterization for the collection.
Contact	This entity describes the basic characteristics for a person or an organization type of contact. These contacts may provide information about a Collection, Delivered Algorithm Package, PGE or Data Originator.
ContactOrganizationAddress	This entity contains the address details for each contact.
ContactPersons	This entity contains the contact person's name and position.
CSDTDescription	The entity exists to provide a description of the data organization of the product.
DepthResolution	This entity stores the minimum distance possible between two adjacent depth values, expressed in depth distance units of measure for collection.
DisciplineKeyword	This entity stores the discipline keyword(s) the collections associate with.
ParameterKeyword	This entity stores the keyword used to describe specific characteristics of a collection at a higher level of detail than provided by VariableKeyword in associated

	DisciplineKeywords.
OrganizationEmail	This entity contains the electronic mail address of the contact.
GranuleURMetaData	This entity contains the basic descriptive characteristics associated with a granule.
FileStorage	This entity stores the granule files information.
InputGranule	This entity contains the identification of the input granule(s) for a specific granule.
GranuleLocality	This entity stores the locality information on the granule level.
MeasuredParameter	This entity contains the name of the geophysical parameter expressed in the granule data as well as associated QA flags and QA status.
OnlineAccessURLs	This entity stores online URL and associated information for the granule if there is any.
OrbitCalculatedSpatialDomain	This entity is used to describe the characteristics of the orbit calculated spatial domain.
GranuleAdditionalAttributes	This entity stores the Product Specific Attributes with value a granule associates.
Review	This entity stores science review dates and status as applicable for granules, which are active.
GranuleSensorCharacteristic	This entity contains records of sensor characteristics for the sensors that be applied to the granule.
GranuleVerticalSpatialDomain	This entity contains the domain value and type for the granule's vertical spatial domain.
Instrument	This entity defines the device used to measure or record data, including direct human observation.
CollectionInstrumentCharacteristic	This entity is used to store the characteristics of instrument specific attributes for the collection.
CollectionInstrumentOperationMode	This entity identifies the instrument's operational modes for a specific collection.
Grid	This entity stores the grid data of a granule.
Platform	This entity registers the relevant platforms associated with the acquisition of the collection or granule.
PlatformCharacteristic	This entity is used to define the characteristics of platform specific attributes.
CollectionPlatform	This entity records the hierarchy of a collection/platform/instrument configuration information.
PROVIDER_INFO	This entity stores data provider specific information.
Sensor	This entity is used to register sensory subcomponents used with various sources.
CollectionSensorCharacteristic	This entity is used to define the characteristics of sensor specific attributes at collection level.
OrganizationTelephone	This entity contains the telephone details associated with the contact.
GranulePlatform	This entity records the hierarchy of a granule/source.
Orbit	This entity stores orbital coverage information of the granule.
OrbitParameters	Orbit parameters for the collection used by the Orbital Backtrack Algorithm.
GranuleOnlineResources	Holding all types of online URL associated with the granule.
CollectionPlatformInstrumentSensor	This entity holds the referential information for collection source/sensor configuration including sensor parameters setting such as technique etc.
GranuleInstrumentCharacteristic	This entity stores granule level instrument characteristics.
GranulePlatformInstrumentSensor	This entity contains the reference between platform/instrument configuration and sensors for the granule.

AssociatedDIFs	This entity stores collections' DIF (Directory Interchange Format) identifier(s).
AlgorithmPackage	This entity holds algorithm package information.
CollectionAttributeMapping	This entity stores the mapping information between PSA names and grid attributes for the collection.
StorageMedium	This entity contains the medium on which the data are stored.
CollectionLocality	This entity stores the locality information on the collection level.
QAProduct	This entity stores the identification of user specified QA information about the granule.
VersionHistory	This entity holds granule version history information.
PHProduct	This entity contains the granule processing history including the identification of input products and granules used to generate the product.
StorageMediumClass	This entity contains the medium on which the granule data are stored.
ProcessingQA	This entity contains the name of the attribute in error in addition to a brief description of the error that occurred during processing.
AalysisSource	The information describes the analysis process applied for the collection
SSAPComponent	This entity stores a piece of an SSAP (Science Software Algorithm Package).
Circle	This entity stores granule's geometry coverage information if the coverage area is described as a circle with center pointer and radians.
DataGranule	This entity contains the basic descriptive characteristics associated with a granule.
PGEVersionClass	This entity contains the basic descriptive characteristics associated with a granule.
QAStats	This entity contains the name of the geophysical parameter expressed in the granule data as well as associated QA flags and QA status.
QAFlags	This entity contains the name of the geophysical parameter expressed in the granule data as well as associated QA flags and QA status.
GranulePlatformInstrument	This entity records the hierarchy of a granule/source.
GranuleSpatialDomain	This entity holds granule spatial domain information.
GranuleHorizontalSpatialDomain	This entity holds granule horizontal spatial domain information.
GranuleHorizontalSpatialDomainGlobal	This Entity contains the flag to indicate the granule's horizontal spatial coverage is whole earth.
HorizontalSpatial	This entity holds granule horizontal spatial coverage data.
Point	This entity holds the horizontal spatial coverage of a point.
Line	This entity holds the horizontal spatial coverage of a line.
BoundingRectangle	This entity holds the horizontal spatial coverage of a bounding rectangle.
Polygon	This entity holds the horizontal spatial coverage of a polygon.
OuterRing	This entity contains the data forms an enclosed horizontal spatial area with possible holes.
InnerRing	This entity represents the exclusive area in a polygon's enclosed area.
CollectionPlatformInstrument	This entity records the hierarchy of a

	collection/platform/instrument configuration information.
CollectionSpatial	This entity contains collection's spatial coverage information.
CollectionVerticalSpatialDomain	This entity contains the domain value and type for the collection's vertical spatial domain.
CollectionHorizontalSpatialDomain	This entity holds collection horizontal spatial coverage data.
GranuleSpatialRepresentation	This entity contains the indication of spatial coordinate system for all the granules in the collection.
GranuleSpatialInheritance	This entity presents the indication of spatial coverage inheritance of the granule in the collection.

3 Entities

3.1 Model level entities

3.1.1 Entity AnalysisSource

3.1.1.1 Description

The information held in this table is used to describe the data acquisition or data processing processes, which characterize a collection. Collections can have both data acquisition and data processing processes associated with them. An example would be a weather analysis collection which included data collected using the NWS ASOS network (PlatformType=Network, PlatformShortName=ASOS) which was processed using an NMC analysis model (e.g. AnalysisType=Model, AnalysisShortName=RAFS, AnalysisDescription=Regional Area Forecast System, AnalysisTechnique= Regional Optimal Interpolation.).

3.1.1.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.1.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
AalysisSource	GranuleURMetaData	0,n	0,n
AalysisSource	CollectionMetaData	0,n	0,n

3.1.1.4 Attribute list of the entity AnalysisSource

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
AnalysisShortName	VA80	80	X	X
AnalysisLongName	VA1024	1024		
AnalysisType	VA80	80		
AnalysisTechnique	VA1024	1024		

3.1.1.5 Attribute AnalysisShortName

3.1.1.5.1 Description

Analysis_short_name is the unique identifier of the collection or analysis processes which best characterize the collection or granule. Collections or granules may be characterized by both a collection and an analysis data set which included data collected using the NWE ASOS network which was processed using an NMC analysis model.

3.1.1.6 Attribute AnalysisLongName

3.1.1.6.1 Description

The expanded or long name of the analysis source identified using analysis short name. It's intended to categorize collections by the processes, which collected or produced them.

3.1.1.7 Attribute AnalysisType

3.1.1.7.1 Description

The defined type of analysis source.

3.1.1.8 Attribute AnalysisTechnique

3.1.1.8.1 Description

The technique or process used to produce the analysis source.

3.1.2 Entity AdditionalAttributes

3.1.2.1 Description

This entity stores the product specific attributes (i.e. attributes used to describe the unique characteristics of the collection which extend beyond those defined in this model).

3.1.2.2 Annotation

3.1.2.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
AdditionalAttributes	CollectionMetaData	0,n	0,n
GranuleAdditionalAttributes	AdditionalAttributes	0,n	1,1

3.1.2.4 Attribute list of the entity AdditionalAttributes

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
ATTRIBUTE_ID	N		X	X
AdditionalAttributeName	VA80	80	X	
AdditionalAttributeDataType	VA80	80		
AdditionalAttributeDescription	VA2048	2048		
MeasurementResolution	VA80	80		
ParameterRangeBegin	VA80	80		
ParameterRangeEnd	VA80	80		
ParameterUnitsOfMeasure	VA80	80		
ParameterValueAccuracy	VA80	80		
ValueAccuracyExplanation	VA2048	2048		

3.1.2.5 Attribute ATTRIBUTE_ID**3.1.2.5.1 Description**

This unique ID identifies a dictionary attribute of Product Specific Attribute (PSA)

3.1.2.6 Attribute AdditionalAttributeName**3.1.2.6.1 Description**

Data type of additional_attribute_name.

3.1.2.7 Attribute AdditionalAttributeDataType**3.1.2.7.1 Description**

Data type of parameter value

3.1.2.8 Attribute AdditionalAttributeDescription**3.1.2.8.1 Description**

This attribute providers a description for the additional_attribute_name.

3.1.2.9 Attribute MeasurementResolution**3.1.2.9.1 Description**

This attribute will be used to identify the smallest unit increment to which the parameter value is measured.

3.1.2.10 Attribute ParameterRangeBegin**3.1.2.10.1 Description**

This attribute providers the minimum value of parameter over whole collection.

3.1.2.11 Attribute ParameterRangeEnd**3.1.2.11.1 Description**

This attribute providers the maximum value of parameter over whole collection.

3.1.2.12 Attribute ParameterUnitsOfMeasure**3.1.2.12.1 Description**

The standard unit of measurement for a not-core attributes. AVHRR: units of geophysical parameter-units of geophysical parameter.

3.1.2.13 Attribute ParameterValueAccuracy

3.1.2.13.1 Description

An estimate of the accuracy of the assignment of attribute value. AVHRR: Measurement error or precision-measurement error or precision of a data product parameter. This can be specified in percent or the unit with which the parameter is measured.

3.1.2.14 Attribute ValueAccuracyExplanation

3.1.2.14.1 Description

This defines the method used for determining the parameter value accuracy that is given for this non core attribute.

3.1.3 Entity AlgorithmPackage

3.1.3.1 Description

This entity provides the common characteristics of the algorithms used in product generation. These characteristics include the algorithm package name, date, version, maturity code and generating system characteristics for the package.

3.1.3.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.3.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
AlgorithmPackage	CollectionMetaData	0,n	0,1
Contact	AlgorithmPackage	0,n	0,n
SSAPComponent	AlgorithmPackage	0,n	0,1

3.1.3.4 Attribute list of the entity AlgorithmPackage

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
AP_ID	N		X	X
AlgorithmPackageName	VA80	80	X	
AlgorithmPackageVersion	VA20	20	X	
AlgorithmPackageMaturityCode	A20	20		
AlgorithmPackageAcceptDate	DT			
DeliveryPurpose	VA1024	1024		
PGEName	VA80	80		
PGEVersion	VA20	20		
PGEIdentifier	VA80	80		
PGEFunction	VA1024	1024		
PGEDateLastModified	DT			
SWVersion	VA12	12		
SWDateLastModified	DT			

3.1.3.5 Attribute AP_ID

3.1.3.5.1 Description

Unique ID for the algorithm package.

3.1.3.6 Attribute AlgorithmPackageName

3.1.3.6.1 Description

This attribute is the name given to the complete delivered package submitted for algorithm integration and test.

3.1.3.7 Attribute AlgorithmPackageVersion

3.1.3.7.1 Description

This attribute specifies the version of the full package being delivered.

3.1.3.8 Attribute AlgorithmPackageMaturityCode

3.1.3.8.1 Description

This specifies the maturity of the algorithm package as a whole. Maturity code plus version number tells version state.

3.1.3.9 Attribute AlgorithmPackageAcceptDate

3.1.3.9.1 Description

This attribute specifies the date that this package version successfully passed AI&T procedures and was accepted as ECS standard algorithm.

3.1.3.10 Attribute DeliveryPurpose

3.1.3.10.1 Description

This attribute describes the purpose of the delivery, like initial release, modification, etc.

3.1.3.11 Attribute PGEName

3.1.3.11.1 Description

Name of product generation executive.

3.1.3.12 Attribute PGEVersion

3.1.3.12.1 Description

Version of PGE, updated whenever code or any static is input in the delivered algorithm.

3.1.3.13 Attribute PGELIdentifier

3.1.3.13.1 Description

Each PGE is to have a unique identifier assigned by the SDPS/W developer. This unique identifier may be one component of a longer name that includes instrument acronym, PGE version number, and release date.

3.1.3.14 Attribute PGEFunction

3.1.3.14.1 Description

Function(s) performed by PGE.

3.1.3.15 Attribute PGEDateLastModified

3.1.3.15.1 Description

Date when PGE information was last modified.

3.1.3.16 Attribute SWVersion

3.1.3.16.1 Description

The actual version of the source code in the SSAP.

3.1.3.17 Attribute SWDateLastModified

3.1.3.17.1 Description

Data and time when the software was last modified.

3.1.4 Entity AltitudeResolution

3.1.4.1 Description

The reference frame or system from which altitudes (elevations) are measured. The term 'altitude' is used instead of the common term 'elevation' to conform to the terminology in Federal Information Processing Standards 70-1 and 173. The information contains the datum name, distance units and encoding method, which provide the definition for the system.

3.1.4.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.4.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
AltitudeResolution	SpatialInfo	0,n	1,1

3.1.4.4 Attribute list of the entity AltitudeResolution

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
AltitudeResolution	N		X	

3.1.4.5 Attribute AltitudeResolution

3.1.4.5.1 Description

The minimum distance possible between two adjacent altitude values, expressed in altitude distance units of measure.

3.1.5 Entity AssociatedDIFs

3.1.5.1 Description

This entity stores collections' DIF (Directory Interchange Format) identifier(s).

3.1.5.2 Annotation

ECHO Database Design and Specification for Metadata Data Model.

3.1.5.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
AssociatedDIFs	CollectionMetaData	0,n	1,1

3.1.5.4 Attribute list of the entity AssociatedDIFs

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
EntryID	VA1024	1024	X	

3.1.5.5 Attribute EntryID

3.1.5.5.1 Description

Unique identifier of the DIF (Directory Interchange Format).

3.1.6 Entity BoundingRectangle

3.1.6.1 Description

This entity holds the horizontal spatial coverage of a line. ECHO stores horizontal spatial coverage bounding rectangle type information using oracle spatial type expression as an four points polygon.

3.1.6.2 Annotation

ECHO Database Design and Specification for Metadata Data Model.

3.1.6.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
BoundingRectangle	HorizontalSpatial	0,1	1,1

3.1.6.4 Attribute list of the entity BoundingRectangle

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
WestBoundingCoordinate	N			
NorthBoundingCoordinate	N			
EastBoundingCoordinate	N			

SouthBoundingCoordinate	N			
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3.1.6.5 Attribute WestBoundingCoordinate**3.1.6.5.1 Description**

Western-most coordinate of the limit of coverage expressed in longitude (degree).

3.1.6.6 Attribute NorthBoundingCoordinate**3.1.6.6.1 Description**

Northern-most coordinate of the limit of coverage expressed in longitude (degree).

3.1.6.7 Attribute EastBoundingCoordinate**3.1.6.7.1 Description**

Eastern-most coordinate of the limit of coverage expressed in longitude (degree).

3.1.6.8 Attribute SouthBoundingCoordinate**3.1.6.8.1 Description**

Southern-most coordinate of the limit of coverage expressed in longitude (degree).

3.1.7 Entity BrowseCrossReference**3.1.7.1 Description**

This entity records browse file information including file size, file location, file URL, file system identification etc.

3.1.7.2 Annotation

ECHO Database Design and Specification for Metadata Data Model.

3.1.7.3 Attribute list of the entity BrowseCrossReference

Name	Data Type	Length	Mandatory	Primary Identifier
BROWSE_ID	N		X	X
BrowseGranuleId	VA1024	1024		
InsertTime	DT			
LastUpdate	DT			
InternalFileName	VA1024	1024		
BrowseURL	VA1024	1024		
BrowseDescription	VA4000	4000		
BrowseSize	N			
BrowseECHOLastUpdate	DT		X	

3.1.7.4 Attribute BROWSE_ID**3.1.7.4.1 Description**

Unique ID which identifies the browse data.

3.1.7.5 Attribute BrowseGranuleId**3.1.7.5.1 Description**

The Universal Reference for a browse type granule given by data provider.

3.1.7.6 Attribute InsertTime**3.1.7.6.1 Description**

Date when the browse data file was inserted by the data provider in the data provider's database.

3.1.7.7 Attribute LastUpdate**3.1.7.7.1 Description**

Date when the browse data file was last updated by the data provider. When referred by ECHO Granule metadata, this attribute is called BrowseLastUpdate.

3.1.7.8 Attribute InternalFileName**3.1.7.8.1 Description**

Name of the browse data file.

3.1.7.9 Attribute BrowseURL**3.1.7.9.1 Description**

URL of the browse data file. This attribute is used for ECHO Granule metadata.

3.1.7.10 Attribute BrowseDescription**3.1.7.10.1 Description**

Description of the browse data file.

3.1.7.11 Attribute BrowseSize**3.1.7.11.1 Description**

Size of the browse data file. When referred by ECHO granule metadata this attribute is called BrowseSizeInBytes.

3.1.7.12 Attribute BrowseECHOLastUpdate**3.1.7.12.1 Description**

Date when the browse data file was last updated in the ECHO database.

3.1.8 Entity CSDTDescription**3.1.8.1 Description**

This entity stores the description of the data organization of the collection (i.e. a generalized collection Description in terms of internal structure). There are many possible structures. All should be describable by one of the PrimaryCSDTs (fixed domain), but the specific implementation has an unbounded domain indicating the range at the lower structured level. While many CSDTs may exist in a granule, only the primary or dominant CSDT is described (e.g. PrimaryCSDT = swath, Implementation = HDF-EOS). The indirect reference is used for collection specific data organization labels. A comment field is provided for further explanation.

3.1.8.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.8.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
CSDTDescription	CollectionMetaData	0,n	1,1

3.1.8.4 Attribute list of the entity CSDTDescription

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
PrimaryCSDT	VA80	80	X	
Implementation	VA1024	1024		
CSDTComments	VA2048	2048		
IndirectReference	VA1024	1024		

3.1.8.5 Attribute PrimaryCSDT**3.1.8.5.1 Description**

The name of the CSDT type of data organization (data type and sub type). Computer Science Data Types are the physical storage types required to support Earth Science Data Types (ESDTs), the logical objects seen in pyramid views.

3.1.8.6 Attribute Implementation

3.1.8.6.1 Description

The name of the implemented form of the CSDT (standard formats, industry standards etc.), including lowest level object description.

3.1.8.7 Attribute CSDTComments

3.1.8.7.1 Description

A free text field for the user to add comments clarifying the data structure.

3.1.8.8 Attribute IndirectReference

3.1.8.8.1 Description

Name of object by which data are organized. Name is the ESDT related or other local name other than the formal CSDT reference. i.e. 2.5 degree bins for CERES, 5 degree bins for CERES, and source packets for level 0.

3.1.9 Entity Campaign

3.1.9.1 Description

This entity contains attributes describing the scientific endeavor(s) to which the collection is associated. Scientific endeavors include campaigns, projects, interdisciplinary science investigations, missions, field experiments, etc.

3.1.9.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.9.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
GranuleURMetaData	Campaign	0,n	0,n
CollectionMetaData	Campaign	0,n	0,n

3.1.9.4 Attribute list of the entity Campaign

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
CampaignShortName	VA40	40	X	X
CampaignLongName	VA80	80		
CampaignStartDate	DT			
CampaignEndDate	DT			

3.1.9.5 Attribute CampaignShortName

3.1.9.5.1 Description

The unique identifier by which a campaign/project/experiment is known. The campaign/project is the scientific endeavor associated with the acquisition of the collection. Collections may be associated with multiple campaigns.

3.1.9.6 Attribute CampaignLongName

3.1.9.6.1 Description

The expanded name of the campaign/experiment (e.g. Global climate observing system).

3.1.9.7 Attribute CampaignStartDate

3.1.9.7.1 Description

The starting date of the campaign.

3.1.9.8 Attribute CampaignEndDate

3.1.9.8.1 Description

The ending data of the campaign.

3.1.10 Entity Circle

3.1.10.1 Description

For any granule which spatial coverage area described by a circle with center pointer and radians, the information is represented by this entity instead of granule's geometrics entity.

3.1.10.2 Annotation

ECHO Database Design and Specification for Metadata Data Model.

3.1.10.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
Circle	HorizontalSpatial	0,1	1,1

3.1.10.4 Attribute list of the entity Circle

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
CenterLatitude	N			
CenterLongitude	N			
Radius	N			

3.1.10.5 Attribute CenterLatitude

3.1.10.5.1 Description

Center point latitude of the circle type spatial coverage area.

3.1.10.6 Attribute CenterLongitude

3.1.10.6.1 Description

The center point longitude of a circle type spatial coverage area.

3.1.10.7 Attribute Radius

3.1.10.7.1 Description

The radius of a circle type spatial coverage area.

3.1.11 Entity CollReview

3.1.11.1 Description

This entity stores science review dates and status as applicable for collections, which are active.

3.1.11.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.11.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
CollReview	CollectionMetaData	0,n	1,1

3.1.11.4 Attribute list of the entity CollReview

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
ScienceReviewDate	DT		X	
ScienceReviewStatus	VA20	20	X	
FutureReviewDate	DT			

3.1.11.5 Attribute ScienceReviewDate

3.1.11.5.1 Description

Date of last QA peer review.

3.1.11.6 Attribute ScienceReviewStatus

3.1.11.6.1 Description

Type of Review which occurred on the 'Science Review Date'

3.1.11.7 Attribute FutureReviewDate

3.1.11.7.1 Description

Date of next planned QA peer review.

3.1.12 Entity CollectionAssociation

3.1.12.1 Description

This entity is used to describe collections associated with the instance of a collection; i.e., the name and other details of input collections, collections associated (in science data terms) with the instance and/or collections dependent on the collection in some way.

3.1.12.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.12.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
CollectionAssociation	CollectionMetaData	0,n	1,1

3.1.12.4 Attribute list of the entity CollectionAssociation

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
AssociatedShortName	A80	80	X	
AssociatedVersionId	N3	3		
CollectionType	VA80	80		
CollectionUse	VA4000	4000		

3.1.12.5 Attribute AssociatedShortName

3.1.12.5.1 Description

The short name of a input collection and/or a dependent collection that is somehow associated with this collection.

3.1.12.6 Attribute AssociatedVersionId

3.1.12.6.1 Description

The version of a input collection and/or a dependent collection that is somehow associated with this collection.

3.1.12.7 Attribute CollectionType

3.1.12.7.1 Description

The type of the association whether a input type or dependent type etc.

3.1.12.8 Attribute CollectionUse

3.1.12.8.1 Description

Explanation of how the associated collection is used for this collection.

3.1.13 Entity CollectionAttributeMapping

3.1.13.1 Description

This entity stores the mapping information between PSA names and grid attributes for the collection.

3.1.13.2 Annotation

ECHO Database Design and Specification for Metadata Data Model.

3.1.13.3 Attribute list of the entity CollectionAttributeMapping

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
MAPPING_NAME	VA80	80	X	
ADDITIONAL_ATTRIBUTE_NAME	VA80	80	X	

3.1.13.4 Attribute MAPPING_NAME**3.1.13.4.1 Description**

The attribute name of the grid entity. Valid value list include: X_BEGIN, Y_BEGIN, X_END, Y_END.

3.1.13.5 Attribute ADDITIONAL_ATTRIBUTE_NAME**3.1.13.5.1 Description**

Additional attribute name from that the corresponding additional attribute value will be extracted and stored into mapped grid attribute.

3.1.14 Entity CollectionHorizontalSpatialDomain**3.1.14.1 Description**

This entity holds collection horizontal spatial coverage data.

3.1.14.2 Annotation

ECHO Database Design and Specification for Metadata Data Model.

3.1.14.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
CollectionHorizontalSpatialDomain	CollectionSpatial	0,n	1,1
HorizontalSpatial	CollectionHorizontalSpatialDomain	0,n	1,1

3.1.14.4 Attribute list of the entity CollectionHorizontalSpatialDomain

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
Global	?			

3.1.14.5 Attribute Global**3.1.14.5.1 Description**

This attribute indicates that granule's horizontal spatial coverage is whole earth.

3.1.15 Entity CollectionInstrumentCharacteristic**3.1.15.1 Description**

This entity is used to define the characteristics of instrument specific attributes for the collection.

3.1.15.2 Annotation

ECHO Database Design and Specification for Metadata Data Model.

Based on adoption from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.15.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>

CollectionInstrumentCharacteristic	CollectionPlatformInstrument	0,n	1,1
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3.1.15.4 Attribute list of the entity CollectionInstrumentCharacteristic

Name	Data Type	Length	Mandatory	Primary Identifier
InstrumentCharacteristicName	VA80	80	X	
InstrumentCharacteristicDescription	VA2048	2048		
InstrumentCharacteristicDataType	A80	80		
InstrumentCharacteristicUnit	VA20	20		
InstrumentCharacteristicValue	VA80	80	X	

3.1.15.5 Attribute InstrumentCharacteristicName

3.1.15.5.1 Description

The name of the instrument characteristic attribute. Instrument characteristic are instrument specific attributes.

3.1.15.6 Attribute InstrumentCharacteristicDescription

3.1.15.6.1 Description

The description of the instrument attributes.

3.1.15.7 Attribute InstrumentCharacteristicDataType

3.1.15.7.1 Description

The data type of the instrument characteristic/attribute defined by InstrumentCharacteristicName.

3.1.15.8 Attribute InstrumentCharacteristicUnit

3.1.15.8.1 Description

The units of the attribute defined with Instrument Characteristic.

3.1.15.9 Attribute InstrumentCharacteristicValue

3.1.15.9.1 Description

The value of the Instrument/attribute defined in Instrument Characteristic. Attributes must have single values.

3.1.16 Entity CollectionInstrumentOperationMode

3.1.16.1 Description

This entity identifies the instrument's operational modes for a specific collection associated with the channel, wavelength, and FOV (e.g., launch, survival, initialization, safe, diagnostic, standby, cross track, biaxial, solar calibration).

3.1.16.2 Annotation

ECHO Database Design and Specification for Metadata Data Model.

Based on adoption from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.16.3 Relationship list

Entity 2	Entity 1	Entity 2 -> Entity 1 Role Cardinality	Entity 1 -> Entity 2 Role Cardinality
CollectionInstrumentOperationMode	CollectionPlatformInstrument	0,n	1,1

3.1.16.4 Attribute list of the entity CollectionInstrumentOperationMode

Name	Data Type	Length	Mandatory	Primary Identifier
OperationMode	VA20	20	X	

3.1.16.5 Attribute OperationMode

3.1.16.5.1 Description

Mode of operation of the instrument. Each instrument will have 1 to n modes which may be static for the collection, or change on a granule-by-granule basis. (e.g. domains: launch, survival, initialization, safe, diagnostic, roll, tilt, standby, routine, test, calibration).

3.1.17 Entity CollectionLocality

3.1.17.1 Description

This entity stores information used at the collection level to describe the labeling of granules with compounded time/space text values and which are subsequently used to define more phenomenological-based collections, thus the locality type and description are contained.

3.1.17.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.17.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
CollectionLocality	CollectionMetaData	0,n	1,1

3.1.17.4 Attribute list of the entity CollectionLocality

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
LocalityType	VA20	20	X	
LocalityDescription	VA255	255		

3.1.17.5 Attribute LocalityType

3.1.17.5.1 Description

Type of entity for which space/time extent is defined. Spatial and temporal domain will be used to define coverage of the data granule; or to define the varying spatial extent over time, of some geophysical event/phenomena e.g. Mid-west Flood of 93, or of certain seasons throughout the world, e.g. monsoon season or spring. It may be used to define the spatial and/or temporal extent of a 'region', be it geophysical or geopolitical in nature. The value is applied at the granule level.

3.1.17.6 Attribute LocalityDescription

3.1.17.6.1 Description

This attribute provides the rationale behind including this locality definition in ECS. It should include the area of Earth Science research that requires such a definition, a description of what the locality represents in general terms, and a brief description or reference to a description of the method used as the source of the definition.

3.1.18 Entity CollectionMetaData

3.1.18.1 Description

This entity contains brief description of collections including the dataset identifier, short and long names, and the version of the collection. This table also provides further description of the collection to include media, revision date, usage, and processing and archive centers etc.

In this entity, the aggregation information such as total number of granules contained by this collection etc. are stored as well.

3.1.18.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

Additional fields are added to host the collection aggregation information, price, book keeping information, and various default setting etc. Collection's dataset ID attribute is added to hold an alternative unique identifier of the collection per provider.

3.1.18.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
CollectionMetaData	Campaign	0,n	0,n
CollectionAssociation	CollectionMetaData	0,n	1,1
DisciplineTopicParameters	CollectionMetaData	0,n	1,1
CollectionOnlineResources	CollectionMetaData	0,n	1,1
CollectionOnlineAccessURLs	CollectionMetaData	0,n	1,1
CollReview	CollectionMetaData	0,n	1,1
SpatialInfo	CollectionMetaData	0,n	1,1
SpatialKeyword	CollectionMetaData	0,n	1,1
Temporal	CollectionMetaData	0,1	1,1
TemporalKeyword	CollectionMetaData	0,n	1,1
CSDTDescription	CollectionMetaData	0,n	1,1
CollectionPlatform	CollectionMetaData	0,n	1,1
AssociatedDIFs	CollectionMetaData	0,n	1,1
StorageMedium	CollectionMetaData	0,n	1,1
CollectionLocality	CollectionMetaData	0,n	1,1
AalysisSource	CollectionMetaData	0,n	0,n
AdditionalAttributes	CollectionMetaData	0,n	0,n
Contact	CollectionMetaData	0,n	0,n
AlgorithmPackage	CollectionMetaData	0,n	0,1
CollectionSpatial	CollectionMetaData	0,n	1,1

3.1.18.4 Attribute list of the entity CollectionMetaData

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
ECHOItemID(R)	VA250	250	X	
ShortName	VA80	80	X	
VersionID	N5,2	5	X	
LongName	VA1024	1024	X	
DataSetID	VA500	500	X	
InsertTime	DT			
LastUpdate	DT			
DeleteTime	DT			
CollectionDescription	VA4000	4000	X	
RevisionDate	DT			
SuggestedUsage	VA4000	4000		
ProcessingCenter	VA80	80		
ProcessingLevelId	VA80	80		
ProcessingLevelDescription	VA2048	2048		
ArchiveCenter	VA80	80		
VersionDescription	VA2048	2048		
CitationforExternalPublication	VA4000	4000		
CollectionState	VA80	80		
MaintenanceandUpdateFrequency	VA80	80		
RestrictionFlag	N			
RestrictionComment	VA1024	1024		
Price	N9,2	9		
Orderable	A1	1		
DataFormat	VA80	80		
TotalGranules(R)	N			

SizeMBTotalGranules(R)	N			
PriceTotalGranules(R)	N			
ECHOInsertDate(R)	DT		X	
ECHOLastUpdate(R)	DT		X	
CatalogItemId(R)	?			

3.1.18.5 Attribute ECHOItemID(R)**3.1.18.5.1 Description**

Collection's unique identification ECHO provided to the public.

3.1.18.6 Attribute ShortName**3.1.18.6.1 Description**

This name will identify the short name associated with the collection. This is the official reference name used in identifying the contents of the data collection.

3.1.18.7 Attribute VersionID**3.1.18.7.1 Description**

Version identifier of the data collection.

3.1.18.8 Attribute LongName**3.1.18.8.1 Description**

This attribute will identify the long name associated with the collection. This is the reference name used in describing the scientific contents of the data collection.

3.1.18.9 Attribute DataSetID**3.1.18.9.1 Description**

Specifies a unique name for the collection. This information is computed by the ECHO according to data providers policy.

3.1.18.10 Attribute InsertTime**3.1.18.10.1 Description**

The insert date/time the collection entered data provider's database. This date is provided by the data provider.

3.1.18.11 Attribute LastUpdate**3.1.18.11.1 Description**

The most recent update occurred on the data provider's database. This date is provided by the data provider.

3.1.18.12 Attribute DeleteTime**3.1.18.12.1 Description**

The date the collection is or is planned to be deleted from the data provider's database. This date is provided by the data provider.

3.1.18.13 Attribute CollectionDescription**3.1.18.13.1 Description**

This attribute identifies the major emphasis of the content of the collection.

3.1.18.14 Attribute RevisionDate**3.1.18.14.1 Description**

Represents the date and possibly the time that this directory entry was created or the latest date and time of its modification or update.

3.1.18.15 Attribute SuggestedUsage**3.1.18.15.1 Description**

This attribute describes how this collection or granule may be best used to support earth science/global change research.

3.1.18.16 Attribute ProcessingCenter**3.1.18.16.1 Description**

Center where collection was or is being processed.

3.1.18.17 Attribute ProcessingLevelId**3.1.18.17.1 Description**

The processing level class contains the level identifier and level description of the collection.

3.1.18.18 Attribute ProcessingLevelDescription**3.1.18.18.1 Description**

Description of Processing Level.

3.1.18.19 Attribute ArchiveCenter**3.1.18.19.1 Description**

Center where collection is archived.

3.1.18.20 Attribute VersionDescription**3.1.18.20.1 Description**

A brief description of the differences between this collection version and another collection version.

3.1.18.21 Attribute CitationforExternalPublication**3.1.18.21.1 Description**

The recommended reference to be used when referring to this collection in publications. Its format is free text, but should include: Originator (the name of an organization or individual that developed the data set, where Editor(s)' names are followed by (ed.) and Compiler(s)' names are followed by (comp.)); Publication date (the date of publication or release of the data set); Title (the name by which document can be referenced).

3.1.18.22 Attribute CollectionState**3.1.18.22.1 Description**

This attribute describes the state of the collection, whether it is planned but not yet existent, partially complete due to continual additions from remotely sensed data/processing/reprocessing, or is considered a complete product/dataset.

3.1.18.23 Attribute MaintenanceandUpdateFrequency**3.1.18.23.1 Description**

The frequency with which changes and additions are made to the collection after the initial dataset begins to be collected/processed.

3.1.18.24 Attribute RestrictionFlag**3.1.18.24.1 Description**

A numerical value indicates the type of restriction that applies on this collection.

3.1.18.25 Attribute RestrictionComment**3.1.18.25.1 Description**

Restrictions and legal prerequisites for accessing the collection. These include any access constraints applied to assure the protection of privacy or intellectual property, and any special restrictions or limitations on obtaining the collection.

These restrictions differ from Use Restrictions in that they only apply to access.

3.1.18.26 Attribute Price**3.1.18.26.1 Description**

The price for ordering the collection.

3.1.18.27 Attribute Orderable

3.1.18.27.1 Description

The indication of whether this collection is orderable.

3.1.18.27.2 Annotation

ECHO metadata data model specification.

3.1.18.28 Attribute DataFormat**3.1.18.28.1 Description**

Granules' raw data format in this collection such as "HDF".

3.1.18.29 Attribute TotalGranules(R)**3.1.18.29.1 Description**

Total number of granules contained in the collection. This number is calculated by the ECHO ingest process and updated on every ingest event.

3.1.18.30 Attribute SizeMBTotalGranules(R)**3.1.18.30.1 Description**

Total number of Meg. bytes of the granule files containing for all the granules in the collection. This number is calculated by the ECHO ingest process and updated on every ingest event.

3.1.18.31 Attribute PriceTotalGranules(R)**3.1.18.31.1 Description**

Total price of granules in this collection.

3.1.18.32 Attribute ECHOInsertDate(R)**3.1.18.32.1 Description**

The date the collection entered the ECHO database.

3.1.18.33 Attribute ECHOLastUpdate(R)**3.1.18.33.1 Description**

The most current update on the collection in the ECHO database.

3.1.18.34 Attribute CatalogItemId(R)**3.1.18.34.1 Description**

Collection's unique identifier in ECHO system. This identifier is generated by ECHO and published to the public for collection order entry.

3.1.19 Entity CollectionOnlineAccessURLs**3.1.19.1 Description**

This entity stores the online URL(s) for the collections if there is any. Those URL either provides the site that user can obtain collection data or give the further instruction of obtaining the collection data.

3.1.19.2 Annotation

ECHO Database Design and Specification for Metadata Data Model.

3.1.19.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
CollectionOnlineAccessURLs	CollectionMetaData	0,n	1,1

3.1.19.4 Attribute list of the entity CollectionOnlineAccessURLs

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
URL	VA500	500	X	

URLDescription	VA4000	4000		
MimeType	VA50	50		

3.1.19.5 Attribute URL

3.1.19.5.1 Description

If the collection data is available online, then the URL will be provided and recorded here.

3.1.19.6 Attribute URLDescription

3.1.19.7 Attribute MimeType

3.1.19.7.1 Annotation

ECHO metadata data model specification.

3.1.20 Entity CollectionOnlineResources

3.1.20.1 Description

This entity records the documentation information of the collection including documentation type and documentation URL where apply etc.

3.1.20.2 Annotation

ECHO Database Design and Specification for Metadata Data Model.

3.1.20.3 Relationship list

Entity 2	Entity 1	Entity 2 -> Entity 1 Role Cardinality	Entity 1 -> Entity 2 Role Cardinality
CollectionOnlineResources	CollectionMetaData	0,n	1,1

3.1.20.4 Attribute list of the entity CollectionOnlineResources

Name	Data Type	Length	Mandatory	Primary Identifier
OnlineResourceURL	VA255	255	X	
OnlineResourceDescription	VA2048	2048		
OnlineResourceType	VA50	50		
OnlineResourceMimeType	VA50	50	X	

3.1.20.5 Attribute OnlineResourceURL

3.1.20.5.1 Description

The URL of the resource associated with the collection.

3.1.20.6 Attribute OnlineResourceDescription

3.1.20.6.1 Description

Comment about the online resource.

3.1.20.6.2 Annotation

ECHO metadata specification

3.1.20.7 Attribute OnlineResourceType

3.1.20.7.1 Description

The type of the resource such as 'Collection Guide' or 'Campaign Guide' etc.

3.1.20.8 Attribute OnlineResourceMimeType

3.1.20.8.1 Description

The mime type of the online resource.

3.1.20.8.2 Annotation

ECHO metadata data model specification.

3.1.21 Entity CollectionPlatform

3.1.21.1 Description

This entity records the hierarchy of a collection/source configuration information with instrument parameters configuration such as instrument technique and number of sensors etc. The hierarchy of collection/source is as below:

collection/platform/instrument

3.1.21.2 Annotation

ECHO Database Design and Specification for Metadata Data Model.

3.1.21.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
CollectionPlatform	CollectionMetaData	0,n	1,1
CollectionPlatform	Platform	0,n	1,1
CollectionPlatformInstrument	CollectionPlatform	0,n	1,1

3.1.21.4 Attribute list of the entity CollectionPlatform

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
PLATFORM_SHORT_NAME	VA80	80	X	

3.1.21.5 Attribute PLATFORM_SHORT_NAME

3.1.21.5.1 Description

The short name of the platform.

3.1.22 Entity CollectionPlatformInstrument

3.1.22.1 Description

This entity records the hierarchy of a collection/source configuration information with instrument parameters configuration such as instrument technique and number of sensors etc. The hierarchy of collection/source is as below:

collection/platform/instrument

3.1.22.2 Annotation

ECHO Database Design and Specification for Metadata Data Model.

3.1.22.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
CollectionPlatformInstrument	CollectionPlatform	0,n	1,1
CollectionInstrumentOperationMode	CollectionPlatformInstrument	0,n	1,1
CollectionInstrumentCharacteristic	CollectionPlatformInstrument	0,n	1,1
CollectionPlatformInstrumentSensor	CollectionPlatformInstrument	0,n	1,1
DisciplineTopicParameters	CollectionPlatformInstrument	0,n	1,1
Instrument	CollectionPlatformInstrument	1,1	0,n

3.1.22.4 Attribute list of the entity CollectionPlatformInstrument

Name	Data Type	Length	Mandatory	Primary Identifier
INSTRUMENT_SHORT_NAME	VA80	80	X	
INSTRUMENT_TECHNIQUE	VA2048	2048		
NUMBER_OF_SENSORS	N			

3.1.22.5 Attribute INSTRUMENT_SHORT_NAME

3.1.22.5.1 Description

The short name of the instrument.

3.1.22.6 Attribute INSTRUMENT_TECHNIQUE

3.1.22.6.1 Description

Techniques used when apply the instrument for the collection.

3.1.22.7 Attribute NUMBER_OF_SENSORS

3.1.22.7.1 Description

Number of sensors placed on the instrument when used to acquire the data for the collection.

3.1.23 Entity CollectionPlatformInstrumentSensor

3.1.23.1 Description

This entity holds the referential information for collection source/sensor configuration including sensor parameters setting such as technique etc.

3.1.23.2 Annotation

ECHO Database Design and Specification for Metadata Data Model.

3.1.23.3 Relationship list

Entity 2	Entity 1	Entity 2 -> Entity 1 Role Cardinality	Entity 1 -> Entity 2 Role Cardinality
CollectionPlatformInstrumentSensor	Sensor	0,n	1,1
CollectionPlatformInstrumentSensor	CollectionPlatformInstrument	0,n	1,1
CollectionSensorCharacteristic	CollectionPlatformInstrumentSensor	0,n	1,1

3.1.23.4 Attribute list of the entity CollectionPlatformInstrumentSensor

Name	Data Type	Length	Mandatory	Primary Identifier
SensorShortName	VA80	80	X	
SensorTechnique	VA2048	2048		

3.1.23.5 Attribute SensorShortName

3.1.23.5.1 Description

Short name of the sensor.

3.1.23.6 Attribute SensorTechnique

3.1.23.6.1 Description

Technique applied for this sensor in the configuration.

3.1.24 Entity CollectionSensorCharacteristic

3.1.24.1 Description

This entity is used to define the characteristics of sensor specific attributes at collection level.

3.1.24.2 Annotation

ECHO Database Design and Specification for Metadata Data Model.

Based on adoption from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.24.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
CollectionSensorCharacteristic	CollectionPlatformInstrumentSensor	0,n	1,1

3.1.24.4 Attribute list of the entity CollectionSensorCharacteristic

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
SensorCharacteristicName	VA80	80	X	
SensorCharacteristicDescription	VA2048	2048		
SensorCharacteristicDataType	A80	80		
SensorCharacteristicUnit	VA20	20		
SensorCharacteristicValue	VA80	80	X	

3.1.24.5 Attribute SensorCharacteristicName

3.1.24.5.1 Description

The name of the Sensor Characteristic/attribute. Sensor attributes defined using SensorCharacteristicName must be single-valued attributes of the object 'Sensor' and not attributes of undefined objects.

3.1.24.6 Attribute SensorCharacteristicDescription

3.1.24.6.1 Description

A description of the attribute defined by SensorCharacteristicName.

3.1.24.7 Attribute SensorCharacteristicDataType

3.1.24.7.1 Description

The data type of the Sensor Characteristic/attribute defined by SensorCharacteristicName.

3.1.24.8 Attribute SensorCharacteristicUnit

3.1.24.8.1 Description

The unit of the Sensor Characteristic (e.g. nanometers).

3.1.24.9 Attribute SensorCharacteristicValue

3.1.24.9.1 Description

The value of the attribute defined in the class SensorCharacteristicDescription. Attributes must have single values.

3.1.25 Entity CollectionSpatial

3.1.25.1 Description

This entity contains collection's spatial coverage information.

3.1.25.2 Annotation

ECHO Database Design and Specification for Metadata Data Model.

3.1.25.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
CollectionSpatial	CollectionMetaData	0,n	1,1

CollectionVerticalSpatialDomain	CollectionSpatial	0,n	1,1
CollectionHorizontalSpatialDomain	CollectionSpatial	0,n	1,1
OrbitParameters	CollectionSpatial	0,n	1,1
GranuleSpatialRepresentation	CollectionSpatial	0,1	1,1
GranuleSpatialInheritance	CollectionSpatial	0,1	1,1

3.1.25.4 Attribute list of the entity CollectionSpatial

Name	Data Type	Length	Mandatory	Primary Identifier
SpatialCoverageType	?			

3.1.25.5 Attribute SpatialCoverageType

3.1.25.5.1 Description

This attribute denotes whether the collection's spatial coverage requires horizontal, vertical, or both in the spatial domain and coordinate system definitions.

3.1.26 Entity CollectionVerticalSpatialDomain

3.1.26.1 Description

This entity contains the domain value and type for the granule's vertical spatial domain.

3.1.26.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.26.3 Relationship list

Entity 2	Entity 1	Entity 2 -> Entity 1 Role Cardinality	Entity 1 -> Entity 2 Role Cardinality
CollectionVerticalSpatialDomain	CollectionSpatial	0,n	1,1

3.1.26.4 Attribute list of the entity CollectionVerticalSpatialDomain

Name	Data Type	Length	Mandatory	Primary Identifier
VerticalSpatialDomainType	VA80	80	X	
VerticalSpatialDomainValue	VA80	80	X	

3.1.26.5 Attribute VerticalSpatialDomainType

3.1.26.5.1 Description

This attribute describes the type of the area of vertical space covered by the locality.

3.1.26.6 Attribute VerticalSpatialDomainValue

3.1.26.6.1 Description

This attribute describes the extent of the area of vertical space covered by the granule. Must be accompanied by an Altitude Encoding Method description. The data type for this attribute is the value of the attribute VerticalSpatialDomainType. The unit for this attribute is the value of either DepthDistanceUnits or AltitudeDistanceUnits.

3.1.27 Entity Contact

3.1.27.1 Description

This entity contains the basic characteristics for a person or an organization type of contact. These contacts may provide information about a Collection, Delivered Algorithm Package, PGE or Data Originator. System and user profile contact information is held elsewhere.

3.1.27.2 Annotation

ECHO Database Design and Specification for Metadata Data Model based on ECS science data model. Refer to 311-CD-008-001

3.1.27.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
Contact	GranuleURMetaData	0,n	0,n
Contact	CollectionMetaData	0,n	0,n
Contact	AlgorithmPackage	0,n	0,n
ContactOrganizationAddress	Contact	0,n	1,1
ContactPersons	Contact	0,n	1,1
OrganizationEmail	Contact	0,n	1,1
OrganizationTelephone	Contact	0,n	1,1

3.1.27.4 Attribute list of the entity Contact

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
CONTACT_ID	N		X	X
Role	VA80	80		
HoursOfService	VA1024	1024		
ContactInstructions	VA2048	2048		
ContactOrganizationName	VA200	200		

3.1.27.5 Attribute CONTACT_ID

3.1.27.5.1 Description

Unique ID which identifies a contact. The contact ID is unique per ECHO system wide.

3.1.27.6 Attribute Role

3.1.27.6.1 Description

The role of the contact (producer, archive, distributor or data originator).

3.1.27.7 Attribute HoursOfService

3.1.27.7.1 Description

Time period when individuals can speak to the organization or individuals.

3.1.27.8 Attribute ContactInstructions

3.1.27.8.1 Description

Supplemental instructions on how or when to contact the individual or organization.

3.1.27.9 Attribute ContactOrganizationName

3.1.27.9.1 Description

The organization and the member of the organization, associated with the data set. Used in cases where the association of the organization to the data set is more significant than the association of the person to the data set.

3.1.28 Entity ContactOrganizationAddress

3.1.28.1 Description

This entity contains the address details for each contact.

3.1.28.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.28.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role</i>	<i>Entity 1 -> Entity 2 Role</i>

		<i>Cardinality</i>	<i>Cardinality</i>
ContactOrganizationAddress	Contact	0,n	1,1

3.1.28.4 Attribute list of the entity ContactOrganizationAddress

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
StreetAddress	VA1024	1024	X	
City	VA80	80	X	
StateProvince	VA30	30	X	
PostalCode	VA20	20	X	
Country	VA10	10	X	

3.1.28.5 Attribute StreetAddress

3.1.28.5.1 Description

An address line for the address, used for mailing or physical addresses of organizations or individuals who serve as points of contact.

3.1.28.6 Attribute City

3.1.28.6.1 Description

The city of the person or organization.

3.1.28.7 Attribute StateProvince

3.1.28.7.1 Description

The state or province of the address.

3.1.28.8 Attribute PostalCode

3.1.28.8.1 Description

The zip or other postal code of the address.

3.1.28.9 Attribute Country

3.1.28.9.1 Description

The country of the address.

3.1.29 Entity ContactPersons

3.1.29.1 Description

This entity contains the contact person's name and position. In some instances, Contact Person is the primary point of contact.

3.1.29.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.29.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
ContactPersons	Contact	0,n	1,1

3.1.29.4 Attribute list of the entity ContactPersons

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
ContactFirstName	VA255	255	X	
ContactMiddleName	VA255	255		
ContactLastName	VA255	255	X	
ContactJobPosition	VA255	255		

3.1.29.5 Attribute ContactFirstName

3.1.29.5.1 Description

First name of the individual which the contact role (producer, archive, distributor, or data originator) applies. People are points of contact, rather than organizations, in cases where the association of the person to the data set is more significant than the association of the organization to the data set. They may also be included if both a single person and organization are provided as points of contact.

3.1.29.6 Attribute ContactMiddleName

3.1.29.6.1 Description

Middle name of the individual which the contact role (producer, archive, distributor, or data originator) applies.

3.1.29.7 Attribute ContactLastName

3.1.29.7.1 Description

Last name of the individual which the contact role (producer, archive, distributor, or data originator) applies.

3.1.29.8 Attribute ContactJobPosition

3.1.29.8.1 Description

The title of the individual, i.e. Team Leader, Principal Investigator.

3.1.30 Entity DataGranule

3.1.30.1 Description

This entity stores the basic descriptive characteristics associated with a granule.

3.1.30.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.30.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
DataGranule	GranuleURMetaData	0,1	1,1

3.1.30.4 Attribute list of the entity DataGranule

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
SizeMBDataGranule	N			
ReprocessingActual	VA80	80		
ReprocessingPlanned	VA80	80		
DayNightFlag	VA5	5		
ProductionDateTime	DT			
ProducerGranuleID	VA80	80		
LocalVersionID	VA80	80		

3.1.30.5 Attribute SizeMBDataGranule

3.1.30.5.1 Description

The size attribute will indicate the volume of data contained in the granule.

3.1.30.6 Attribute ReprocessingActual

3.1.30.6.1 Description

Granule level, stating what reprocessing has been performed on this granule.

3.1.30.7 Attribute ReprocessingPlanned

3.1.30.7.1 Description

Granule level, stating what reprocessing may be performed on this granule.

3.1.30.8 Attribute DayNightFlag**3.1.30.8.1 Description**

This attribute is used to identify if a granule was collected during the day, night (between sunset and sunrise) or both.

3.1.30.9 Attribute ProductionDateTime**3.1.30.9.1 Description**

The date and time a specific granule was produced by a PGE.

3.1.30.10 Attribute ProducerGranuleID**3.1.30.10.1 Description**

Unique identifier for locally produced granule that ECS ingests and is required to capture.

3.1.30.11 Attribute LocalVersionID**3.1.30.11.1 Description**

Granule version identifier for PGE defined granule defined by the producer.

3.1.31 Entity DepthResolution**3.1.31.1 Description**

This entity stores the minimum distance possible between two adjacent depth values, expressed in depth distance units of measure for collection.

3.1.31.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.31.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
DepthResolution	SpatialInfo	0,n	1,1

3.1.31.4 Attribute list of the entity DepthResolution

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
DepthResolution	N		X	

3.1.31.5 Attribute DepthResolution**3.1.31.5.1 Description**

The minimum distance possible between two adjacent depth values, expressed in depth distance units of measure.

3.1.32 Entity DisciplineKeyword**3.1.32.1 Description**

This entity stores the discipline keyword(s) the collections associate with.

3.1.32.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.32.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role</i>	<i>Entity 1 -> Entity 2 Role</i>

		<i>Cardinality</i>	<i>Cardinality</i>
DisciplineTopicParameters	DisciplineKeyword	0,n	1,1

3.1.32.4 Attribute list of the entity DisciplineKeyword

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
DISCIPLINE_KEYWORD_ID	N		X	X
DisciplineKeyword	VA500	500	X	
TopicKeyword	VA500	500	X	
TermKeyword	VA500	500	X	
VariableKeyword	VA500	500		

3.1.32.5 Attribute DISCIPLINE_KEYWORD_ID

3.1.32.5.1 Description

Unique Identification for a discipline keywords set. This ID is unique per data provider.

3.1.32.6 Attribute DisciplineKeyword

3.1.32.6.1 Description

Keyword used to describe the general discipline area of the collection. A collection can conceivably cover several disciplines.

3.1.32.7 Attribute TopicKeyword

3.1.32.7.1 Description

Keyword used to describe the general topic area of the collection. A collection can conceivably cover several topics.

3.1.32.8 Attribute TermKeyword

3.1.32.8.1 Description

Keyword used to describe the science parameter area of the collection. A collection can conceivably cover many such parameters.

3.1.32.9 Attribute VariableKeyword

3.1.32.9.1 Description

Keyword used to describe the specific science parameter content of the collection. A collection can conceivably cover many specific parameters. The keyword valid are the lowest level physical parameter terms which are normally searched by a user.

3.1.33 Entity DisciplineTopicParameters

3.1.33.1 Description

This entity holds cross reference between collections and discipline keywords. The cross reference could further involve association between discipline keywords and collection's platform/instrument configuration.

3.1.33.2 Annotation

ECHO Database Design and Specification for Metadata Data Model.

3.1.33.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
DisciplineTopicParameters	CollectionMetaData	0,n	1,1
DisciplineTopicParameters	DisciplineKeyword	0,n	1,1
DisciplineTopicParameters	CollectionPlatformInstrument	0,n	1,1
ParameterKeyword	DisciplineTopicParameters	0,n	1,1

3.1.34 Entity FileStorage

3.1.34.1 Description

This entity stores the granule files information. This table might be obsolete in near future.

3.1.34.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.34.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
FileStorage	GranuleURMetaData	0,n	1,1

3.1.34.4 Attribute list of the entity FileStorage

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
FileName	VA1024	1024	X	
FileSize	N			
CreationDate	DT			

3.1.34.5 Attribute FileName

3.1.34.5.1 Description

The name of the file contains granule data. The file will not be stored in the ECHO system. The file name is the name that reference to the data provider's file system.

3.1.34.6 Attribute FileSize

3.1.34.6.1 Description

The size of the file containing granule data.

3.1.34.7 Attribute CreationDate

3.1.34.7.1 Description

The date that file is created on data provider's file system.

3.1.35 Entity GranuleAdditionalAttributes

3.1.35.1 Description

This entity stores the Product Specific Attributes with value a granule associates.

3.1.35.2 Annotation

ECHO Database Design and Specification for Metadata Data Model.

3.1.35.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
GranuleAdditionalAttributes	GranuleURMetaData	0,n	1,1
GranuleAdditionalAttributes	AdditionalAttributes	0,n	1,1

3.1.35.4 Attribute list of the entity GranuleAdditionalAttributes

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
AdditionalAttributeName	VA80	80	X	
AdditionalAttributeValue	VA500	500		
AdditionalAttributeValueType	VA20	20		

3.1.35.5 Attribute AdditionalAttributeName

3.1.35.5.1 Description

Additional attribute name.

3.1.35.6 Attribute AdditionalAttributeValue**3.1.35.6.1 Description**

The value of the product specific attribute for this granule.

3.1.35.7 Attribute AdditionalAttributeValueType**3.1.35.7.1 Description**

The data type of the product specific attribute.

3.1.36 Entity GranuleHorizontalSpatialDomain**3.1.36.1 Description**

This entity holds granule horizontal spatial domain information.

3.1.36.2 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
GranuleHorizontalSpatialDomain	GranuleSpatialDomain	0,1	1,1
Orbit	GranuleHorizontalSpatialDomain	0,1	1,1
GranuleHorizontalSpatialDomainGlobal	GranuleHorizontalSpatialDomain	0,1	1,1
HorizontalSpatial	GranuleHorizontalSpatialDomain	0,n	1,1

3.1.37 Entity GranuleHorizontalSpatialDomainGlobal**3.1.37.1 Description**

This Entity contains the flag to indicate the granule's horizontal spatial coverage is whole earth.

3.1.37.2 Annotation

ECHO Database Design and Specification for Metadata Data Model.

3.1.37.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
GranuleHorizontalSpatialDomainGlobal	GranuleHorizontalSpatialDomain	0,1	1,1

3.1.37.4 Attribute list of the entity GranuleHorizontalSpatialDomainGlobal

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
Global	BL			

3.1.37.5 Attribute Global**3.1.37.5.1 Description**

This attribute indicates that granule's horizontal spatial coverage is whole earth.

3.1.38 Entity GranuleInstrumentCharacteristic**3.1.38.1 Description**

This entity stores granule level instrument characteristic values.

3.1.38.2 Annotation

ECHO Database Design and Specification for Metadata Data Model.

3.1.38.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -></i>	<i>Entity 1 -></i>
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		<i>Entity 1 Role Cardinality</i>	<i>Entity 2 Role Cardinality</i>
GranuleInstrumentCharacteristic	GranulePlatformInstrument	0,n	1,1

3.1.38.4 Attribute list of the entity GranuleInstrumentCharacteristic

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
InstrumentCharacteristicName	VA1024	1024		
InstrumentCharacteristicDescription	VA1024	1024		

3.1.38.5 Attribute InstrumentCharacteristicName

3.1.38.5.1 Description

The name of the instrument characteristic attribute. Instrument characteristic are instrument specific attributes.

3.1.38.6 Attribute InstrumentCharacteristicDescription

3.1.38.6.1 Description

The value of the Instrument/attribute defined in Instrument Characteristic. Attributes must have single values.

3.1.39 Entity GranuleLocality

3.1.39.1 Description

This entity stores information used at the granule level to describe the labeling of granules with compounded time/space text values and which are subsequently used to define more phenomenological-based granules, thus the locality type and description are contained.

3.1.39.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.39.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
GranuleLocality	GranuleSpatialDomain	0,n	1,1

3.1.39.4 Attribute list of the entity GranuleLocality

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
LocalityValue	VA1024	1024	X	

3.1.39.5 Attribute LocalityValue

3.1.39.5.1 Description

Provides name which spatial/temporal entity is known. This could change on a granule by granule basis. This attribute is paralleled by the AggregationType which applies at the collection level although locality has a more restricted usage. Several locality measures could be included in each granule.

3.1.40 Entity GranuleOnlineResources

3.1.40.1 Description

This entity holds all types of online URL associated with the granule such as guide document or ordering site etc.

3.1.40.2 Annotation

ECHO Database Design and Specification for Metadata Data Model.

3.1.40.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role</i>	<i>Entity 1 -> Entity 2 Role</i>

		<i>Cardinality</i>	<i>Cardinality</i>
GranuleOnlineResources	GranuleURMetaData	0,n	1,1

3.1.40.4 Attribute list of the entity GranuleOnlineResources

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
OnlineResourceURL	VA1024	1024	X	
OnlineResourceDescription	VA2048	2048		
OnlineResourceType	VA50	50	X	
OnlineResourceMimeType	VA50	50	X	

3.1.40.5 Attribute OnlineResourceURL

3.1.40.5.1 Description

The URL of the resource associated with the granule.

3.1.40.6 Attribute OnlineResourceDescription

3.1.40.6.1 Description

Comment about the online resource.

3.1.40.7 Attribute OnlineResourceType

3.1.40.7.1 Description

The type of the resource such as 'Collection Guide' or 'Campaign Guide' etc.

3.1.40.8 Attribute OnlineResourceMimeType

3.1.40.8.1 Description

The mime type of the online resource.

3.1.41 Entity GranulePlatform

3.1.41.1 Description

This entity records the hierarchy of a granule/source. The hierarchy of granule/source is granule->platform->instrument.

3.1.41.2 Annotation

ECHO Database Design and Specification for Metadata Data Model.

3.1.41.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
GranulePlatform	GranuleURMetaData	0,n	1,1
GranulePlatform	Platform	0,n	1,1
GranulePlatformInstrument	GranulePlatform	0,n	1,1

3.1.41.4 Attribute list of the entity GranulePlatform

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
SOURCE_ID	N		X	X
PlatformShortName	VA80	80		

3.1.41.5 Attribute SOURCE_ID

3.1.41.5.1 Description

Source ID for granule/source configuration.

3.1.41.6 Attribute PlatformShortName**3.1.42 Entity GranulePlatformInstrument****3.1.42.1 Description**

This entity records the hierarchy of a granule/source. The hierarchy of granule/source is granule->platform->instrument.

3.1.42.2 Annotation

ECHO Database Design and Specification for Metadata Data Model.

3.1.42.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
GranulePlatformInstrument	GranulePlatform	0,n	1,1
Instrument	GranulePlatformInstrument	1,1	0,1
GranuleInstrumentCharacteristic	GranulePlatformInstrument	0,n	1,1
GranulePlatformInstrumentSensor	GranulePlatformInstrument	0,n	1,1

3.1.42.4 Attribute list of the entity GranulePlatformInstrument

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
InstrumentShortName	N			
InstrumentTechnique	VA2048	2048		
NumberOfSensors	N			
OperationMode	VA20	20		

3.1.42.5 Attribute InstrumentShortName**3.1.42.5.1 Description**

The short name of the instrument.

3.1.42.6 Attribute InstrumentTechnique**3.1.42.6.1 Description**

Technique applied on the instrument when acquire the granule data.

3.1.42.7 Attribute NumberOfSensors**3.1.42.7.1 Description**

Number of sensors used on the instrument when acquire the granule data.

3.1.42.8 Attribute OperationMode**3.1.42.8.1 Description**

The operation mode applied on the instrument when acquire the granule data.

3.1.43 Entity GranulePlatformInstrumentSensor**3.1.43.1 Description**

This entity contains the reference between platform/instrument configuration and sensors for the granule.

3.1.43.2 Annotation

ECHO Database Design and Specification for Metadata Data Model.

3.1.43.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
GranulePlatformInstrumentSensor	Sensor	0,n	1,1
GranulePlatformInstrumentSensor	GranulePlatformInstrument	0,n	1,1
GranuleSensorCharacteristic	GranulePlatformInstrumentSensor	0,n	1,1

3.1.43.4 Attribute list of the entity GranulePlatformInstrumentSensor

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
SensorShortName	VA80	80	X	
SensorTechnique	VA2048	2048		

3.1.43.5 Attribute SensorShortName

3.1.43.5.1 Description

Short name of the sensor.

3.1.43.6 Attribute SensorTechnique

3.1.43.6.1 Description

Technique applied on the sensor when used in the collection/source configuration.

3.1.44 Entity GranuleSensorCharacteristic

3.1.44.1 Description

This entity contains records of sensor characteristics for the sensors that be applied to the granule.

3.1.44.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.44.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
GranuleSensorCharacteristic	GranulePlatformInstrumentSensor	0,n	1,1

3.1.44.4 Attribute list of the entity GranuleSensorCharacteristic

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
SensorCharacteristicName	VA80	80		
SensorCharacteristicValue	VA80	80		

3.1.44.5 Attribute SensorCharacteristicName

3.1.44.5.1 Description

The name of the Sensor Characteristic/attribute applied on the granule.

3.1.44.6 Attribute SensorCharacteristicValue

3.1.44.6.1 Description

The value of the attribute applied to the granule. Attributes must have single values.

3.1.45 Entity GranuleSpatialDomain

3.1.45.1 Description

This entity holds granule spatial domain information.

3.1.45.2 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role</i>	<i>Entity 1 -> Entity 2 Role</i>

		<i>Cardinality</i>	<i>Cardinality</i>
GranuleSpatialDomain	GranuleURMetaData	0,1	1,1
GranuleLocality	GranuleSpatialDomain	0,n	1,1
GranuleVerticalSpatialDomain	GranuleSpatialDomain	0,n	1,1
GranuleHorizontalSpatialDomain	GranuleSpatialDomain	0,1	1,1

3.1.46 Entity GranuleSpatialInheritance

3.1.46.1 Description

This entity presents the indication of spatial coverage inheritance of the granule in the collection. If set, granules in the collection will have same spatial coverage information as defined for the collection.

3.1.46.2 Annotation

ECHO Database Design and Specification for Metadata Data Model.

3.1.46.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
GranuleSpatialInheritance	CollectionSpatial	0,1	1,1

3.1.46.4 Attribute list of the entity GranuleSpatialInheritance

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
GranuleSpatialInheritance	?			

3.1.46.5 Attribute GranuleSpatialInheritance

3.1.46.5.1 Description

Indication of spatial coverage inheritance of the granule in the collection.

3.1.47 Entity GranuleSpatialRepresentation

3.1.47.1 Description

This entity contains the indication of spatial coordinate system for all the granules in the collection.

3.1.47.2 Annotation

ECHO Database Design and Specification for Metadata Data Model.

3.1.47.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
GranuleSpatialRepresentation	CollectionSpatial	0,1	1,1

3.1.47.4 Attribute list of the entity GranuleSpatialRepresentation

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
GranuleSpatialRepresentation	?			

3.1.47.5 Attribute GranuleSpatialRepresentation

3.1.47.5.1 Description

Spatial coverage coordinate system used for all granules in this collection. Valid list include: "Cartesian", "Geodetic", "Orbit", and "NoSpatial".

3.1.48 Entity GranuleURMetaData

3.1.48.1 Description

This entity stores the basic descriptive characteristics associated with a granule.

3.1.48.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

Additional attributes been added for book keeping information.

3.1.48.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
GranuleURMetaData	Campaign	0,n	0,n
FileStorage	GranuleURMetaData	0,n	1,1
InputGranule	GranuleURMetaData	0,n	1,1
MeasuredParameter	GranuleURMetaData	0,n	1,1
OnlineAccessURLs	GranuleURMetaData	0,n	1,1
OrbitCalculatedSpatialDomain	GranuleURMetaData	0,n	1,1
GranuleAdditionalAttributes	GranuleURMetaData	0,n	1,1
Review	GranuleURMetaData	0,n	1,1
Grid	GranuleURMetaData	0,n	1,1
GranulePlatform	GranuleURMetaData	0,n	1,1
GranuleOnlineResources	GranuleURMetaData	0,n	1,1
QAProduct	GranuleURMetaData	0,n	1,1
VersionHistory	GranuleURMetaData	0,n	1,1
PHProduct	GranuleURMetaData	0,n	1,1
StorageMediumClass	GranuleURMetaData	0,n	1,1
ProcessingQA	GranuleURMetaData	0,n	1,1
DataGranule	GranuleURMetaData	0,1	1,1
AalysisSource	GranuleURMetaData	0,n	0,n
PGEVersionClass	GranuleURMetaData	0,n	1,1
Contact	GranuleURMetaData	0,n	0,n
GranuleSpatialDomain	GranuleURMetaData	0,1	1,1

3.1.48.4 Attribute list of the entity GranuleURMetaData

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
GRANULE_ID	N		X	X
ECHOItemId(R)	N		X	
GranuleUR	VA250	250	X	X
GranuleVersionID	N5,2	5		
RangeBeginningDate	DT			
RangeBeginningTime	VA20	20		
RangeEndingDate	DT			
RangeEndingTime	VA20	20		
CalendarDate	DT			
TimeOfDay	VA20	20		
ZoneIdentifier	VA80	80		
Price	N9,2	9		
Global	A1	1		
InsertTime	DT			
LastUpdate	DT			
DeleteTime	DT			
ECHOInsertDate	DT		X	
ECHOLastUpdate	DT		X	
Orderable	A1	1		
DataFormat	VA80	80		
CatalogItemId	?			

RestrictionFlag	N			
RestrictionComment	VA1024	1024		

3.1.48.5 Attribute GRANULE_ID**3.1.48.5.1 Description**

The ECHO system wide unique identifier of the granule that used to build referential relationship amongst tables.

3.1.48.6 Attribute ECHOItemId**3.1.48.6.1 Description**

The ECHO system wide unique identifier of the granule that published to the public. This identifier is generated by ECHO.

3.1.48.7 Attribute GranuleUR**3.1.48.7.1 Description**

The Universal Reference ID of the granule referred by the data provider. This ID is unique per data provider.

3.1.48.8 Attribute GranuleVersionID**3.1.48.8.1 Description**

The version number of the granule.

3.1.48.9 Attribute RangeBeginningDate**3.1.48.9.1 Description**

The year (and optionally month, or month and day) when the temporal coverage period being described began.

3.1.48.10 Attribute RangeBeginningTime**3.1.48.10.1 Description**

The first hour (and optionally minute, or minute and second) of the temporal coverage period being described.

3.1.48.11 Attribute RangeEndingDate**3.1.48.11.1 Description**

The last year (and optionally month, or month and day) of the temporal coverage period being described.

3.1.48.12 Attribute RangeEndingTime**3.1.48.12.1 Description**

The last hour (and optionally minute, or minute and second) of the temporal coverage period being described.

3.1.48.13 Attribute CalendarDate**3.1.48.13.1 Description**

The year (and optionally month, or month and day). This attribute is used to specify a single date covered by a data granule.

3.1.48.14 Attribute TimeOfDay**3.1.48.14.1 Description**

The hour (and optionally minute, or minute and second) of the day. This attribute is used to specify a single point in time covered by a data collection. In the GSFC_CZCS collection this would reflect the Pass_time which is the time of the first scan of the scene.

3.1.48.15 Attribute ZoneIdentifier**3.1.48.15.1 Description**

The appropriate numeric or alpha code used to identify the various zones in this grid coordinate system.

3.1.48.16 Attribute Price**3.1.48.16.1 Description**

The price of the granule data when order.

3.1.48.17 Attribute Global**3.1.48.17.1 Description**

The indication flag of whether or not a granule has global coverage.

3.1.48.18 Attribute InsertTime**3.1.48.18.1 Description**

The date/time this granule was entered data provider's database. The data provider provides this info.

3.1.48.19 Attribute LastUpdate**3.1.48.19.1 Description**

The date/time that data provider last updated the granule info on data provider's database. The data provider provides this info.

3.1.48.20 Attribute DeleteTime**3.1.48.20.1 Description**

The date/time that data provider deleted the granule from data provider's database. The data provider provides this info.

3.1.48.21 Attribute ECHOInsertDate**3.1.48.21.1 Description**

The date/time this granule being entered ECHO database.

3.1.48.22 Attribute ECHOLastUpdate**3.1.48.22.1 Description**

The last date/time that the granule info being updated in the ECHO database.

3.1.48.23 Attribute Orderable**3.1.48.23.1 Description**

Indication of whether the granule is orderable.

3.1.48.23.2 Annotation

ECHO metadata data model specification.

3.1.48.24 Attribute DataFormat**3.1.48.24.1 Description**

The file format of the raw data (such as HDF) for this granule. If not provided, take the data format defined for its primary collection if applicable.

3.1.48.25 Attribute CatalogItemId**3.1.48.25.1 Description**

Granule's unique identifier in ECHO system. This identifier is generated by ECHO and published to the public for granule order entry.

3.1.48.26 Attribute RestrictionFlag**3.1.48.26.1 Description**

The numerical value indicates the type of the restriction that applies on the granule for data access.

3.1.48.27 Attribute RestrictionComment**3.1.48.27.1 Description**

The restriction constraint applied on the granule for data access. This data could be defined for each granule. If there is no restriction constraint given for the granule, the restriction constraint of its primary collection will be used if applicable.

3.1.49 Entity GranuleVerticalSpatialDomain**3.1.49.1 Description**

This entity contains the domain value and type for the granule's vertical spatial domain.

3.1.49.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.49.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
GranuleVerticalSpatialDomain	GranuleSpatialDomain	0,n	1,1

3.1.49.4 Attribute list of the entity GranuleVerticalSpatialDomain

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
VerticalSpatialDomainType	VA80	80	X	
VerticalSpatialDomainValue	VA80	80	X	

3.1.49.5 Attribute VerticalSpatialDomainType

3.1.49.5.1 Description

This attribute describes the type of the area of vertical space covered by the locality.

3.1.49.6 Attribute VerticalSpatialDomainValue

3.1.49.6.1 Description

This attribute describes the extent of the area of vertical space covered by the granule. Must be accompanied by an Altitude Encoding Method description. The data type for this attribute is the value of the attribute VerticalSpatialDomainType. The unit for this attribute is the value of either DepthDistanceUnits or AltitudeDistanceUnits.

3.1.50 Entity Grid

3.1.50.1 Description

This entity stores the grid information for the granule. The grid information is an alternative way to express granule's spatial coverage based on a certain grid system defined by the providers.

The following discussion on Landsat's PATH/ROW is an example of grid information.

The Path is the longitudinal center line of a Landsat scene corresponding to the center of an orbital track that represented by grid Y lines.

The Row is the Latitudinal center line of a Landsat scene that corresponding to grid X lines.

The indication of the grid type is "WRS-2".

The grid information can be used to designate a geographic search for a nominal scene center.

3.1.50.2 Annotation

ECHO Database Design and Specification for Metadata Data Model.

3.1.50.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
Grid	GranuleURMetaData	0,n	1,1

3.1.50.4 Attribute list of the entity Grid

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
GridStartX	N			
GridStartY	N			
GridEndX	N			
GridEndY	N			
GridType	VA80	80		

3.1.50.5 Attribute GridStartX

3.1.50.5.1 Description

The horizontal starting line of the nominal scene center based on the grid system. This value could be either entered directly as part of metadata or extracted from PSA value based on a pre-defined PSA name.

3.1.50.6 Attribute GridStartY

3.1.50.6.1 Description

The vertical starting line of the nominal scene center based on the grid system. This value could be either entered directly as part of metadata or extracted from PSA value based on a pre-defined PSA name.

3.1.50.7 Attribute GridEndX

3.1.50.7.1 Description

The horizontal ending line of the nominal scene center based on the grid system. This value could be either entered directly as part of metadata or extracted from PSA value based on a pre-defined PSA name.

3.1.50.8 Attribute GridEndY

3.1.50.8.1 Description

The vertical ending line of the nominal scene center based on the grid system. This value could be either entered directly as part of metadata or extracted from PSA value based on a pre-defined PSA name.

3.1.50.9 Attribute GridType

3.1.50.9.1 Description

The type of the grid defined by the providers such as "WRS-2" for Landsat scene.

3.1.51 Entity HorizontalSpatial

3.1.51.1 Description

This entity holds granule horizontal spatial coverage data.

3.1.51.2 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
HorizontalSpatial	GranuleHorizontalSpatialDomain	0,n	1,1
HorizontalSpatial	CollectionHorizontalSpatialDomain	0,n	1,1
Circle	HorizontalSpatial	0,1	1,1
Point	HorizontalSpatial	0,1	1,1
Line	HorizontalSpatial	0,1	1,1
BoundingRectangle	HorizontalSpatial	0,1	1,1
Polygon	HorizontalSpatial	0,1	1,1

3.1.51.3 Attribute list of the entity HorizontalSpatial

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
ZoneIdentifier	?			

3.1.51.4 Attribute ZoneIdentifier

3.1.51.4.1 Description

The appropriate numeric or alpha code used to identify the various zones in this grid coordinate system.

3.1.52 Entity InnerRing

3.1.52.1 Description

This entity represents the exclusive area in a polygon's enclosed area. This entity is formed by at least three Point entities that forms an enclosed area within the associated OuterRing of the Polygon. ECHO stores horizontal spatial coverage Polygon type information using oracle spatial type expression.

3.1.52.2 Annotation

ECHO Database Design and Specification for Metadata Data Model.

3.1.52.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
OuterRing	InnerRing	0,n	1,1

3.1.52.4 Attribute list of the entity InnerRing

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
Points	?			

3.1.52.5 Attribute Points

3.1.52.5.1 Description

This is a space holding attribute.

3.1.53 Entity InputGranule

3.1.53.1 Description

This entity contains the identification of the input granule(s) for a specific granule.

3.1.53.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.53.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
InputGranule	GranuleURMetaData	0,n	1,1

3.1.53.4 Attribute list of the entity InputGranule

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
InputPointer	VA255	255		

3.1.53.5 Attribute InputPointer

3.1.54 Entity Instrument

3.1.54.1 Description

This entity registers the device used to measure or record data, including direct human observation. In cases where instruments have a single sensor or the instrument and sensor are used synonymously (e.g. AVHRR) the both Instrument and Sensor should be recorded. The Sensor information is represented by some other entities.

3.1.54.2 Annotation

ECHO Database Design and Specification for Metadata Data Model.

3.1.54.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
Instrument	GranulePlatformInstrument	1,1	0,1
Instrument	CollectionPlatformInstrument	1,1	0,n

3.1.54.4 Attribute list of the entity Instrument

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>

InstrumentShortName	VA80	80	X	X
InstrumentTechnique	VA1024	1024		

3.1.54.5 Attribute InstrumentShortName

3.1.54.5.1 Description

The unique identifier of an instrument.

3.1.54.6 Attribute InstrumentTechnique

3.1.54.6.1 Description

The expanded name of the primary sensory instrument. (e.g. Advanced Spaceborne Thermal Emission and Reflective Radiometer, Clouds and the Earth's Radiant Energy System, Human Observation).

3.1.55 Entity Line

3.1.55.1 Description

This entity holds the horizontal spatial coverage of a line. A line area contains at least two points expressed with (PointLongitude, PointLatitude). A Line entity forms with at least two Point entity. ECHO stores horizontal spatial coverage Line type information using oracle spatial type expression.

3.1.55.2 Annotation

ECHO Database Design and Specification for Metadata Data Model.

3.1.55.3 Relationship list

Entity 2	Entity 1	Entity 2 -> Entity 1 Role Cardinality	Entity 1 -> Entity 2 Role Cardinality
Line	HorizontalSpatial	0,1	1,1

3.1.55.4 Attribute list of the entity Line

Name	Data Type	Length	Mandatory	Primary Identifier
LinePoints	?			

3.1.55.5 Attribute LinePoints

3.1.55.5.1 Description

This is a space holding attribute for Line entity. A Line entity forms with at least two Point entity.

3.1.56 Entity MeasuredParameter

3.1.56.1 Description

This entity contains the name of the geophysical parameter expressed in the data as well as associated quality flags and quality status. The quality status contains measures of quality for the granule. The parameters used to set these measures are not preset and will be determined by the data producer. Each set of measures can occur many times either for the granule as a whole or for individual parameters. The quality flags contain the science, operational and automatic quality flags which indicate the overall quality assurance levels of specific parameter values within a granule.

3.1.56.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.56.3 Relationship list

Entity 2	Entity 1	Entity 2 -> Entity 1 Role Cardinality	Entity 1 -> Entity 2 Role Cardinality
MeasuredParameter	GranuleURMetaData	0,n	1,1
QAStats	MeasuredParameter	0,n	1,1
QAFlags	MeasuredParameter	0,n	1,1

3.1.56.4 Attribute list of the entity MeasuredParameter

Name	Data Type	Length	Mandatory	Primary Identifier
ParameterName	VA250	250	X	

3.1.56.5 Attribute ParameterName

3.1.56.5.1 Description

The measured science parameter expressed in the data granule.

3.1.57 Entity OnlineAccessURLs

3.1.57.1 Description

This entity stores the online URL(s) for the granule if there is any. Those URL either provides the site that user can obtain granule data or give the further instruction of obtaining the granule data.

3.1.57.2 Annotation

ECHO Database Design and Specification for Metadata Data Model.

3.1.57.3 Relationship list

Entity 2	Entity 1	Entity 2 -> Entity 1 Role Cardinality	Entity 1 -> Entity 2 Role Cardinality
OnlineAccessURLs	GranuleURMetaData	0,n	1,1

3.1.57.4 Attribute list of the entity OnlineAccessURLs

Name	Data Type	Length	Mandatory	Primary Identifier
URL	VA500	500	X	
URLDescription	VA4000	4000		
MimeType	VA50	50		

3.1.57.5 Attribute URL

3.1.57.5.1 Description

If the granule data is available online, then the URL will be provided and recorded here.

3.1.57.6 Attribute URLDescription

3.1.57.6.1 Description

Description about the URL or any associated information.

3.1.57.7 Attribute MimeType

3.1.57.7.1 Annotation

ECHO metadata data model specification.

3.1.58 Entity Orbit

3.1.58.1 Description

This entity stores orbital coverage information of the granule. This coverage is an alternative way of express granule spatial coverage. This information supports orbital backtrack search apply on granule.

3.1.58.2 Annotation

ECHO Database Design and Specification for Metadata Data Model.

3.1.58.3 Relationship list

Entity 2	Entity 1	Entity 2 -> Entity 1 Role Cardinality	Entity 1 -> Entity 2 Role Cardinality
Orbit	GranuleHorizontalSpatialDomain	0,1	1,1

3.1.58.4 Attribute list of the entity Orbit

Name	Data Type	Length	Mandatory	Primary Identifier
AscendingCrossing	N			
StartLat	N			
StartDirection	A1	1		
EndLat	N			
EndDirection	A1	1		
NumberOfOrbit	N			

3.1.58.5 Attribute AscendingCrossing

3.1.58.5.1 Description

Equatorial crossing on the ascending pass in decimal degrees longitude. The convention we've been using is it's the first included ascending crossing if one is included and the prior ascending crossing if none is included (e.g. descending half orbits).

3.1.58.6 Attribute StartLat

3.1.58.6.1 Description

Granule's starting latitude.

3.1.58.7 Attribute StartDirection

3.1.58.7.1 Description

Ascending or descending. Valid input: "A" or "D".

3.1.58.8 Attribute EndLat

3.1.58.8.1 Description

Granule's ending latitude.

3.1.58.9 Attribute EndDirection

3.1.58.9.1 Description

Ascending or descending. Valid input: "A" or "D".

3.1.58.10 Attribute NumberOfOrbit

3.1.58.10.1 Description

Currently it defaults to 1. Backtrack currently works only single orbits.

3.1.59 Entity OrbitCalculatedSpatialDomain

3.1.59.1 Description

This entity is used to store the characteristics of the orbit calculated spatial domain to include the model name, orbit number, start and stop orbit number, equator crossing date and time, and equator crossing longitude.

3.1.59.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.59.3 Relationship list

Entity 2	Entity 1	Entity 2 -> Entity 1 Role Cardinality	Entity 1 -> Entity 2 Role Cardinality
OrbitCalculatedSpatialDomain	GranuleURMetaData	0,n	1,1

3.1.59.4 Attribute list of the entity OrbitCalculatedSpatialDomain

Name	Data Type	Length	Mandatory	Primary Identifier
Orbital modelName	VA80	80		
OrbitNumber	N38	38		

StartOrbitNumber	N			
StopOrbitNumber	N			
EquatorCrossingLongitude	N			
EquatorCrossingDate	DT			
EquatorCrossingTime	VA20	20		

3.1.59.5 Attribute OrbitalModelName**3.1.59.5.1 Description**

The reference to the orbital model to be used to calculate the geo location of this data in order to determine global spatial extent.

3.1.59.6 Attribute OrbitNumber**3.1.59.6.1 Description**

The orbit number to be used in calculating the spatial extent of this data.

3.1.59.7 Attribute StartOrbitNumber**3.1.59.7.1 Description**

Orbit number at start of data granule.

3.1.59.8 Attribute StopOrbitNumber**3.1.59.8.1 Description**

Orbit number at end of data granule.

3.1.59.9 Attribute EquatorCrossingLongitude**3.1.59.9.1 Description**

This attribute represents the terrestrial longitude of the descending equator crossing.

3.1.59.10 Attribute EquatorCrossingDate**3.1.59.10.1 Description**

This attribute represents the date of the descending equator crossing.

3.1.59.11 Attribute EquatorCrossingTime**3.1.59.11.1 Description**

This attribute represents the time of the descending equator crossing.

3.1.60 Entity OrbitParameters**3.1.60.1 Description**

Orbit parameters for the collection used by the Orbital Backtrack Algorithm.

3.1.60.2 Annotation

ECHO Database Design and Specification for Metadata Data Model.

3.1.60.3 Relationship list

Entity 2	Entity 1	Entity 2 -> Entity 1 Role Cardinality	Entity 1 -> Entity 2 Role Cardinality
OrbitParameters	CollectionSpatial	0,n	1,1

3.1.60.4 Attribute list of the entity OrbitParameters

Name	Data Type	Length	Mandatory	Primary Identifier
SwathWidth	N			
Period	N			
InclinationAngle	N			

3.1.60.5 Attribute SwathWidth**3.1.60.5.1 Description**

Width of the swath at the equator in Kilometer.

3.1.60.6 Attribute Period**3.1.60.6.1 Description**

Orbital period in decimal minutes.

3.1.60.7 Attribute InclinationAngle**3.1.60.7.1 Description**

Inclination of the orbit. This is the same as (180-declination) and also the same as the highest latitude achieved by the satellite. Data Unit: Degree.

3.1.61 Entity OrganizationEmail**3.1.61.1 Description**

This entity contains the electronic mail address of the contact.

3.1.61.2 Annotation

ECHO Database Design and Specification for Metadata Data Model.

3.1.61.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
OrganizationEmail	Contact	0,n	1,1

3.1.61.4 Attribute list of the entity OrganizationEmail

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
ElectronicEmailAddress	VA1024	1024	X	

3.1.61.5 Attribute ElectronicEmailAddress**3.1.61.5.1 Description**

The address of the electronic mailbox of the organization or individual.

3.1.62 Entity OrganizationTelephone**3.1.62.1 Description**

This entity contains the telephone details associated with the contact.

3.1.62.2 Annotation

ECHO Database Design and Specification for Metadata Data Model.

3.1.62.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
OrganizationTelephone	Contact	0,n	1,1

3.1.62.4 Attribute list of the entity OrganizationTelephone

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
TelephoneNumber	VA23	23	X	
TelephoneType	VA30	30		

3.1.62.5 Attribute TelephoneNumber

3.1.62.5.1 Description

Number of organization or individual who is point of contact. The general format of the number includes country, area, and STD codes, as required for the full telephone number. Multi-extensions should be single entries rather than part of a single entry text.

3.1.62.6 Attribute TelephoneType

3.1.62.6.1 Description

The type of telephone number being provided in this instance of the phone number, in order to reach the organization or individual who serves as a point of contact.

3.1.63 Entity OuterRing

3.1.63.1 Description

This entity contains the data forms an enclosed horizontal spatial area with possible holes. This entity forms with at least three Point entities and 0 to many OuterRing entities. ECHO stores horizontal spatial coverage information using oracle spatial type expression.

3.1.63.2 Annotation

ECHO Database Design and Specification for Metadata Data Model.

3.1.63.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
OuterRing	Polygon	0,n	1,1
OuterRing	InnerRing	0,n	1,1

3.1.63.4 Attribute list of the entity OuterRing

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
Points	?			

3.1.63.5 Attribute Points

3.1.63.5.1 Description

This is a space holding attribute.

3.1.64 Entity PGEVersionClass

3.1.64.1 Description

This entity stores the basic descriptive characteristics associated with a granule.

3.1.64.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.
Added PGName attribute.

3.1.64.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
PGEVersionClass	GranuleURMetaData	0,n	1,1

3.1.64.4 Attribute list of the entity PGEVersionClass

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
PGName	VA1024	1024		
PGEVersion	A10	10		

3.1.64.5 Attribute PGName**3.1.64.6 Attribute PGEVersion****3.1.64.6.1 Description**

Version of the Delivered Algorithm Package that applied when produce the granule.

3.1.65 Entity PHProduct**3.1.65.1 Description**

This entity contains the granule processing history including the identification of input products and granules used to generate the product.

3.1.65.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.65.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
PHProduct	GranuleURMetaData	0,n	1,1

3.1.65.4 Attribute list of the entity PHProduct

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
PHGranuleId	VA80	80	X	

3.1.65.5 Attribute PHGranuleId**3.1.65.5.1 Description**

The identification of the processing granule provided by the data provider.

3.1.66 Entity PROVIDER_INFO**3.1.66.1 Description**

This entity stores data provider specific information such as date format in XML metadata data file, default coordinate system of spatial geometry data for collections or granules respectively, orderability for collections or granules respectively, and default order package option etc.

3.1.66.2 Annotation

ECHO Database Design and Specification for Metadata Data Model.

3.1.66.3 Attribute list of the entity PROVIDER_INFO

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
SYS_ID	N		X	
DATA_CENTER_ID	VA80	80		
DATE_FORMAT	VA40	40		
CLOUD_COVER_NAME	VA40	40		
SCHEMA_VERSION	VA10	10		
DEFAULT_COLL_ORDERABLE	A1	1		
DEFAULT_GR_ORDERABLE	A1	1		
DEFAULT_COLL_SP REP	VA50	50		
DEFAULT_GR_SP REP	VA50	50		
DEFAULT_PKGID	N			

3.1.66.4 Attribute SYS_ID**3.1.66.4.1 Description**

Cross-reference ID that reference to the SYS_ID in the EJB_USER table of the ECHO data schema. The SYS_ID is the ECHO unique identifier for a data provider.

3.1.66.5 Attribute DATA_CENTER_ID**3.1.66.5.1 Description**

The data center ID provided by the data provider at establishment that refer to the data center where the data provider is located.

3.1.66.6 Attribute DATE_FORMAT**3.1.66.6.1 Description**

The format for the date information in the XML metadata input file for this data provider. ECHO ingest process use this information to handle the date information conversion between the input data and oracle date type.

3.1.66.7 Attribute CLOUD_COVER_NAME**3.1.66.7.1 Description**

The PSA name for the overall percentage of cloud coverage. ECHO will use this information to extract the overall percentage of cloud coverage information from the GranuleAdditionalAttribute entity and put into ALL_GRANULES table for search optimization.

3.1.66.8 Attribute SCHEMA_VERSION**3.1.66.8.1 Description**

The ECHO data model version that schema based on.

3.1.66.9 Attribute DEFAULT_COLL_ORDERABLE**3.1.66.9.1 Description**

The indication of collection item orderability. Valid list include: "Y", "N". The orderable indication given in collection metadata input file over writes this setting.

3.1.66.10 Attribute DEFAULT_GR_ORDERABLE**3.1.66.10.1 Description**

The indication of granule item orderability for the collection. Valid list include: "Y", "N". The orderable indication given in granule metadata input file over writes this setting.

3.1.66.11 Attribute DEFAULT_COLL_SP REP**3.1.66.11.1 Description**

Spatial coverage coordinate system for all the collections. Valid list include: "Cartesian", "Geodetic", "Global". The spatial coverage coordinate system indicated in the collection metadata input over writes this value.

3.1.66.12 Attribute DEFAULT_GR_SP REP**3.1.66.12.1 Description**

Spatial coverage coordinate system for all the granules of the collections. Valid list include: "Cartesian", "Geodetic", "Global", "Orbit", "NoSpatial". The spatial coverage coordinate system for the granule indicated in the collection metadata input over writes this value.

3.1.66.13 Attribute DEFAULT_PKGID**3.1.66.13.1 Description**

The numerical identification of order package option that applies to all the orderable items (collection and/or granule).

3.1.67 Entity ParameterKeyword**3.1.67.1 Description**

This entity stores the keyword used to describe specific characteristics of a collection at a higher level of detail than provided by VariableKeyword in associated DisciplineKeywords.

3.1.67.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.67.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role</i>	<i>Entity 1 -> Entity 2 Role</i>
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		<i>Cardinality</i>	<i>Cardinality</i>
ParameterKeyword	DisciplineTopicParameters	0,n	1,1

3.1.67.4 Attribute list of the entity ParameterKeyword

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
COLLECTION_ID	N		X	
SOURCE_ID	N		X	
DISCIPLINE_KEYWORD_ID	N		X	
ParameterKeyword	VA255	255	X	

3.1.67.5 Attribute COLLECTION_ID

3.1.67.5.1 Description

The collection ID that parameter keyword associate with.

3.1.67.6 Attribute SOURCE_ID

3.1.67.6.1 Description

The source ID (indication of platform/instrument combination) that parameter keyword associate with for the associated collection. If the parameter dose not have platform/instrument level association but only collection level association, then source_id value is 0.

3.1.67.7 Attribute DISCIPLINE_KEYWORD_ID

3.1.67.7.1 Description

The discipline keyword tuple ID that parameter associates with additional to collection association and possible platform/instruction association.

3.1.67.8 Attribute ParameterKeyword

3.1.67.8.1 Description

Keyword used to describe specific characteristics of a collection at a higher level of detail than provided by VariableKeyword.

3.1.68 Entity PeriodicDateTime

3.1.68.1 Description

This entity contains the name of the temporal period in addition to the date, time, duration unit, and value, and cycle duration unit and value. Used at the collection level to describe a collection having granules, which cover a regularly occurring period?

3.1.68.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.68.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
PeriodicDateTime	Temporal	0,n	1,1

3.1.68.4 Attribute list of the entity PeriodicDateTime

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
PeriodName	VA30	30	X	
Period1stDate	DT		X	
Period1stTime	VA20	20		
PeriodDurationUnit	VA15	15	X	
PeriodDurationValue	F		X	
PeriodCycleDurationUnit	VA15	15	X	

PeriodCycleDurationValue	N	X	
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3.1.68.5 Attribute PeriodName**3.1.68.5.1 Description**

The name given to the recurring time period.

e.g. 'spring - north hemi.'

3.1.68.6 Attribute Period1stDate**3.1.68.6.1 Description**

This attribute provides the date (day) of the first occurrence of this regularly occurring period which is relevant to the collection, granule, or event coverage.

3.1.68.6.2 Annotation

ECHO metadata data model specification.

3.1.68.7 Attribute Period1stTime**3.1.68.7.1 Description**

This attribute provides the time of the first occurrence of this regularly occurring period which is relevant to the collection, granule, or event coverage.

3.1.68.8 Attribute PeriodDurationUnit**3.1.68.8.1 Description**

The unit specification for the period duration.

Example values include: decade, year, month, week, day, hour, minute, second, microsecond, millisecond

3.1.68.9 Attribute PeriodDurationValue**3.1.68.9.1 Description**

The number of PeriodDurationUnits in the RegularPeriodic period.

e.g. the RegularPeriodic event 'Spring-North Hemi' might have a PeriodDurationUnit='month'

PeriodDurationValue=3.0

PeriodCycleDurationUnit='year'

PeriodCycleDurationValue='1.0'

indicating that Spring-North Hemi lasts for 3.0 months and has a cycle duration of 1.0 year.

The unit for the attribute is the value of the attribute PeriodDurationValue.

3.1.68.10 Attribute PeriodCycleDurationUnit**3.1.68.10.1 Description**

The unit specification of the period cycle duration.

Example values include:

decade, year, month, week, day, hour, minute, second, microsecond, millisecond

3.1.68.11 Attribute PeriodCycleDurationValue**3.1.69 Entity PlanarCoordinateSystem****3.1.69.1 Description**

This entity stores collections' coordinate system reference information include description of the system and geo-reference information, the name of the map projection [the systematic representation of all or part of the surface of the Earth on a plane or developable surface], a logical pointer to the map projection details, the description of the coordinate system and geo-reference information, and the resolutions units, direction, and meridian for the planar coordinate system etc.

3.1.69.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.69.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
PlanarCoordinateSystem	SpatialInfo	0,n	1,1

3.1.69.4 Attribute list of the entity PlanarCoordinateSystem

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
PlanarCoordinateSystemID	VA80	80		
PlanarCoordinateEncodingMet	VA80	80		
PlanarDistanceUnits	VA80	80		
BearingReferenceDirection	VA20	20		
BearingReferenceMeridian	VA2048	2048		
BearingResolution	N			
BearingUnits	VA255	255		
DistanceResolution	N			
AbscissaResolution	N			
OrdinateResolution	N			
MapProjectionName	VA80	80		
MapProjectionPointer	VA255	255		
LocalPlanarCoordinateSystem	VA1024	1024		
LocalPlanarGeoReferenceInfo	VA1024	1024		
GridCoordinateSystemName	VA255	255		

3.1.69.5 Attribute PlanarCoordinateSystemID

3.1.69.5.1 Description

The reference ID of the planar coordinate system. This ID is unique per data provider.

3.1.69.6 Attribute PlanarCoordinateEncodingMet

3.1.69.6.1 Description

The means used to represent horizontal positions in the planar coordinate system.

3.1.69.7 Attribute PlanarDistanceUnits

3.1.69.7.1 Description

Units of measure used for planar coordinate description distances.

3.1.69.8 Attribute BearingReferenceDirection

3.1.69.8.1 Description

Direction from which the bearing is measured clockwise.

3.1.69.9 Attribute BearingReferenceMeridian

3.1.69.9.1 Description

Axis from which the bearing is measured.

3.1.69.10 Attribute BearingResolution

3.1.69.10.1 Description

The minimum angle measurable between two points, expressed in Bearing Units of measure.

3.1.69.11 Attribute BearingUnits

3.1.69.11.1 Description

Units of measure used for angles.

3.1.69.12 Attribute DistanceResolution**3.1.69.12.1 Description**

The minimum distance measurable between two points, expressed in Planar Distance Units of measure.

3.1.69.13 Attribute AbscissaResolution**3.1.69.13.1 Description**

The (nominal) minimum distance between the 'x' or column values of two adjacent points, expressed in Planar Distance Units of measure. Planar Distance Units of measure are units used for distances whose domain values are meters, international feet, and survey feet.

3.1.69.14 Attribute OrdinateResolution**3.1.69.14.1 Description**

The (nominal) minimum distance between the 'y' or row values of two adjacent points, expressed in Planar Distance Units of measure. Planar Distance Units of measure are units for distances whose domain values are meters, international feet, and survey feet.

3.1.69.15 Attribute MapProjectionName**3.1.69.15.1 Description**

The name of the systematic representation of all or part of the surface of the Earth on a plane or developable surface.

3.1.69.16 Attribute MapProjectionPointer**3.1.69.16.1 Description**

This is a data modeling logical reference to a map projection.

3.1.69.17 Attribute LocalPlanarCoordinateSystem**3.1.69.17.1 Description**

A description of the local planar coordinate system.

3.1.69.18 Attribute LocalPlanarGeoReferenceInfo**3.1.69.18.1 Description**

A description of the information provided to register the local planar system to the Earth (e.g. control points, satellite ephemeral data, and inertial navigation data)

3.1.69.19 Attribute GridCoordinateSystemName**3.1.69.19.1 Description**

This attribute contains the name of the grid coordinate system.

3.1.70 Entity Platform**3.1.70.1 Description**

This entity describes the relevant platforms associated with the acquisition of the collection or granule. Platform types include Spacecraft, Aircraft, Vessel, Buoy, Platform, Station, Network or Human etc.

3.1.70.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.70.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
PlatformCharacteristic	Platform	0,n	1,1
CollectionPlatform	Platform	0,n	1,1
GranulePlatform	Platform	0,n	1,1

3.1.70.4 Attribute list of the entity Platform

Name	Data Type	Length	Mandatory	Primary Identifier
PLATFORM_ID	N		X	X
PlatformShortName	VA80	80	X	
PlatformLongName	VA1024	1024		
PlatformType	VA80	80		

3.1.70.5 Attribute PLATFORM_ID

3.1.70.5.1 Description

The ECHO unique identifier for a platform. This identifier not only identifies a platform based on a platform but based on the platform with all its parameters and characteristic set. This identifier is unique per data provider.

3.1.70.6 Attribute PlatformShortName

3.1.70.6.1 Description

The unique platform name. (e.g. GOES-8).

3.1.70.7 Attribute PlatformLongName

3.1.70.7.1 Description

The expanded or long name of the platform associated with an instrument.

3.1.70.8 Attribute PlatformType

3.1.70.8.1 Description

The most relevant platform type.

3.1.71 Entity PlatformCharacteristic

3.1.71.1 Description

This entity is used to define the characteristics of platform specific attributes.

3.1.71.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.71.3 Relationship list

Entity 2	Entity 1	Entity 2 -> Entity 1 Role Cardinality	Entity 1 -> Entity 2 Role Cardinality
PlatformCharacteristic	Platform	0,n	1,1

3.1.71.4 Attribute list of the entity PlatformCharacteristic

Name	Data Type	Length	Mandatory	Primary Identifier
PlatformCharacteristicName	VA80	80	X	
PlatformCharacteristicDescription	VA2048	2048		
PlatformCharacteristicDataType	VA80	80		
PlatformCharacteristicUnit	VA20	20		
PlatformCharacteristicValue	VA80	80		

3.1.71.5 Attribute PlatformCharacteristicName

3.1.71.5.1 Description

The name of the Platform Characteristic attribute.

3.1.71.6 Attribute PlatformCharacteristicDescription

3.1.71.6.1 Description

Description of the Platform Characteristic attribute.

3.1.71.7 Attribute PlatformCharacteristicDataType**3.1.71.7.1 Description**

The data type of the Platform Characteristic/attribute defined by PlatformCharacteristicName.

3.1.71.8 Attribute PlatformCharacteristicUnit**3.1.71.8.1 Description**

Units associated with the Platform Characteristic attribute value.

3.1.71.9 Attribute PlatformCharacteristicValue**3.1.71.9.1 Description**

The value of the Platform Characteristic attribute.

3.1.72 Entity Point**3.1.72.1 Description**

This entity holds the horizontal spatial coverage of a point.

3.1.72.2 Annotation

ECHO Database Design and Specification for Metadata Data Model.

3.1.72.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
Point	HorizontalSpatial	0,1	1,1

3.1.72.4 Attribute list of the entity Point

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
PointLongitude	N			
PointLatitude	N			

3.1.72.5 Attribute PointLongitude**3.1.72.5.1 Description**

The longitude value of a spatially referenced pointer in degree.

3.1.72.6 Attribute PointLatitude**3.1.72.6.1 Description**

The latitude value of a spatially referenced pointer in degree.

3.1.73 Entity Polygon**3.1.73.1 Description**

This entity holds the horizontal spatial coverage of a polygon. A polygon area contains at least one enclosed spatial region. A Polygon entity forms with at least one OuterRing entity that containing 0 or more InnerRing entities. ECHO stores horizontal spatial coverage Polygon type information using oracle spatial type expression.

3.1.73.2 Annotation

ECHO Database Design and Specification for Metadata Data Model.

3.1.73.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
Polygon	HorizontalSpatial	0,1	1,1
OuterRing	Polygon	0,n	1,1

3.1.74 Entity ProcessingQA

3.1.74.1 Description

This entity contains the name of the attribute in error in addition to a brief description of the error that occurred during processing.

3.1.74.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.74.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
ProcessingQA	GranuleURMetaData	0,n	1,1

3.1.74.4 Attribute list of the entity ProcessingQA

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
ProcessingQADescription	VA2048	2048		
ProcessingQAAttribute)	VA1024	1024	X	

3.1.74.5 Attribute ProcessingQADescription

3.1.74.5.1 Description

This attribute provides description of the error encountered during processing for the specified Processing QA Attribute

3.1.74.6 Attribute ProcessingQAAttribute)

3.1.74.6.1 Description

This attribute identifies the non-science QA attribute which did not meet pre-defined parameter thresholds during validation processing.

3.1.75 Entity QAFlags

3.1.75.1 Description

This entity contains the name of the geophysical parameter expressed in the data as well as associated quality flags and quality status. The quality status contains measures of quality for the granule. The parameters used to set these measures are not preset and will be determined by the data producer. Each set of measures can occur many times either for the granule as a whole or for individual parameters. The quality flags contain the science, operational and automatic quality flags which indicate the overall quality assurance levels of specific parameter values within a granule.

3.1.75.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.75.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
QAFlags	MeasuredParameter	0,n	1,1

3.1.75.4 Attribute list of the entity QAFlags

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
AutomaticQualityFlag	VA80	80		
AutomaticQualityFlagExplanation	VA2048	2048		
OperationalQualityFlag	VA80	80		
OperationalQualityFlagExplanation	VA2048	2048		
ScienceQualityFlag	VA80	80		

ScienceQualityFlagExplanation	VA2048	2048		
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3.1.75.5 Attribute AutomaticQualityFlag

3.1.75.5.1 Description

The granule level flag applying generally to the granule and specifically to parameters at the granule level. When applied to parameter, the flag refers to the quality of that parameter for the granule (as applicable). The parameters determining whether the flag is set are defined by the developer and documented in the Quality Flag Explanation.

3.1.75.6 Attribute AutomaticQualityFlagExplanation

3.1.75.6.1 Description

A text explanation of the criteria used to set automatic quality flag; including thresholds or other criteria.

3.1.75.7 Attribute OperationalQualityFlag

3.1.75.7.1 Description

The granule level flag applying both generally to a granule and specifically to parameters at the granule level. When applied to parameter, the flag refers to the quality of that parameter for the granule (as applicable). The parameters determining whether the flag is set are defined by the developers and documented in the QualityFlagExplanation.

3.1.75.8 Attribute OperationalQualityFlagExplanation

3.1.75.8.1 Description

A text explanation of the criteria used to set operational quality flag; including thresholds or other criteria.

3.1.75.9 Attribute ScienceQualityFlag

3.1.75.9.1 Description

Granule level flag applying to a granule, and specifically to parameters. When applied to parameter, the flag refers to the quality of that parameter for the granule (as applicable). The parameters determining whether the flag is set are defined by the developers and documented in the Quality Flag Explanation.

3.1.75.10 Attribute ScienceQualityFlagExplanation

3.1.75.10.1 Description

A text explanation of the criteria used to set science quality flag; including thresholds or other criteria.

3.1.76 Entity QAProduct

3.1.76.1 Description

This entity stores the identification of user specified QA information about the granule.

3.1.76.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.76.3 Relationship list

Entity 2	Entity 1	Entity 2 -> Entity 1 Role Cardinality	Entity 1 -> Entity 2 Role Cardinality
QAProduct	GranuleURMetaData	0,n	1,1

3.1.76.4 Attribute list of the entity QAProduct

Name	Data Type	Length	Mandatory	Primary Identifier
QAGranuleId	VA80	80	X	

3.1.76.5 Attribute QAGranuleId

3.1.76.5.1 Description

The identification of the QA granule provided by the data provider.

3.1.77 Entity QAStats

3.1.77.1 Description

This entity contains the name of the geophysical parameter expressed in the data as well as associated quality flags and quality status. The quality status contains measures of quality for the granule. The parameters used to set these measures are not preset and will be determined by the data producer. Each set of measures can occur many times either for the granule as a whole or for individual parameters. The quality flags contain the science, operational and automatic quality flags which indicate the overall quality assurance levels of specific parameter values within a granule.

3.1.77.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.77.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
QAStats	MeasuredParameter	0,n	1,1

3.1.77.4 Attribute list of the entity QAStats

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
QAPercentMissingData	N			
QAPercentOutofBoundsData	N			
QAPercentInterpolatedData	N			
QAPercentCloudCover	N			

3.1.77.5 Attribute QAPercentMissingData

3.1.77.5.1 Description

Granule level % missing data. This attribute can be repeated for individual parameters within a granule.

3.1.77.6 Attribute QAPercentOutofBoundsData

3.1.77.6.1 Description

Granule level % out of bounds data. This attribute can be repeated for individual parameters within a granule.

3.1.77.7 Attribute QAPercentInterpolatedData

3.1.77.7.1 Description

Granule level % interpolated data. This attribute can be repeated for individual parameters within a granule.

3.1.77.8 Attribute QAPercentCloudCover

3.1.77.8.1 Description

This attribute is used to characterize the cloud cover amount of a granule. This attribute may be repeated for individual parameters within a granule. (Note - there may be more than one way to define a cloud or its effects within a product containing several parameters; i.e. this attribute may be parameter specific)

3.1.78 Entity RangeDateTime

3.1.78.1 Description

This entity stores the start and end date/time of a collection.

3.1.78.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.78.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
RangeDateTime	Temporal	0,n	1,1

3.1.78.4 Attribute list of the entity RangeDateTime

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
RangeBeginningDate	DT		X	
RangeBeginningTime	VA20	20	X	
RangeEndingDate	DT		X	
RangeEndingTime	VA20	20	X	

3.1.78.5 Attribute RangeBeginningDate

3.1.78.5.1 Description

The year (and optionally month, or month and day) when the temporal coverage period being described began.

3.1.78.6 Attribute RangeBeginningTime

3.1.78.6.1 Description

The first hour (and optionally minute, or minute and second) of the temporal coverage period being described.

3.1.78.7 Attribute RangeEndingDate

3.1.78.7.1 Description

The last year (and optionally month, or month and day) of the temporal coverage period being described.

3.1.78.8 Attribute RangeEndingTime

3.1.78.8.1 Description

The last hour (and optionally minute, or minute and second) of the temporal coverage period being described for granule or collection.

3.1.79 Entity Review

3.1.79.1 Description

This entity stores science review dates and status as applicable for granules, which are active.

3.1.79.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.79.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
Review	GranuleURMetaData	0,n	1,1

3.1.79.4 Attribute list of the entity Review

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
ScienceReviewStatus	VA20	20	X	
ScienceReviewDate	DT		X	
FutureReviewDate	DT			

3.1.79.5 Attribute ScienceReviewStatus

3.1.79.5.1 Description

Type of Review which occurred on the 'Science Review Date'

3.1.79.6 Attribute ScienceReviewDate

3.1.79.6.1 Description

Date of last QA peer review.

3.1.79.7 Attribute FutureReviewDate**3.1.79.7.1 Description**

Date of next planned QA peer review.

3.1.80 Entity SSAPComponent**3.1.80.1 Description**

This entity stores a piece of an SSAP (Science Software Algorithm Package).

3.1.80.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.80.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
SSAPComponent	AlgorithmPackage	0,n	0,1

3.1.80.4 Attribute list of the entity SSAPComponent

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
SSAP_ID	N		X	X
ComponentType	VA50	50		
ComponentName	VA50	50		
SSAPAlgorithmPackageName	VA50	50		
SSAPIInsertDate	VA40	40		

3.1.80.5 Attribute SSAP_ID**3.1.80.5.1 Description**

The unique identifier of a sub component of the algorithm package. This identifier is unique per data provider.

3.1.80.6 Attribute ComponentType**3.1.80.6.1 Description**

Type of the component.

3.1.80.7 Attribute ComponentName**3.1.80.7.1 Description**

Name of the Component.

3.1.80.8 Attribute SSAPAlgorithmPackageName**3.1.80.8.1 Description**

Name of the Algorithm Package (from AP) that this component is associated with. An SSAPComponent may only be associated with ONE AP.

3.1.80.9 Attribute SSAPIInsertDate**3.1.80.9.1 Description**

The date of the SSAP entered data provider's system. This date is provided by the data provider.

3.1.81 Entity Sensor**3.1.81.1 Description**

This entity is used to register sensory subcomponents used by various sources.

3.1.81.2 Annotation

ECHO Database Design and Specification for Metadata Data Model.

3.1.81.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
GranulePlatformInstrumentSensor	Sensor	0,n	1,1
CollectionPlatformInstrumentSensor	Sensor	0,n	1,1

3.1.81.4 Attribute list of the entity Sensor

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
SensorShortName	VA80	80	X	X
SensorLongName	VA1024	1024		

3.1.81.5 Attribute SensorShortName

3.1.81.5.1 Description

A sensor is a defined sensory sub-component of an instrument. (e.g. InstrumentShortName=ASTER, NumberofSensors= 3, SensorShortName= SWIR, SensorShortName= TIR, SensorShortName= VNIR) In cases where the Instrument has a single Sensor or the Instrument and Sensor are synonymous then both attributes should be populated. (e.g. AVHRR). Sensors cannot exist without Instruments.

3.1.81.6 Attribute SensorLongName

3.1.81.6.1 Description

The generic or long name description of a sensor. (e.g. Visible-Near Infrared, Human Visual, Human Auditory).

3.1.82 Entity SingleDateTime

3.1.82.1 Description

This entity stores the time of day and calendar date for an ECS collection. This information provides a means of encoding a single date and time for a granule occurring at that time or during the period covered by the time (e.g. one-day for a single date excluding the time within the day).

3.1.82.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.82.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
SingleDateTime	Temporal	0,n	1,1

3.1.82.4 Attribute list of the entity SingleDateTime

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
CalendarDate	DT		X	
TimeOfDay	VA20	20	X	

3.1.82.5 Attribute CalendarDate

3.1.82.5.1 Description

The year (and optionally month, or month and day). This attribute is used to specify a single date covered by a data collection.

3.1.82.6 Attribute TimeOfDay

3.1.82.6.1 Description

The hour (and optionally minute, or minute and second) of the day. This attribute is used to specify a single point in time covered by a data collection. In the GSFC_CZCS collection this would reflect the Pass_time which is the time of the first scan of the scene.

3.1.83 Entity SpatialInfo

3.1.83.1 Description

This entity stores the reference frame or system from which altitudes (elevations) are measured. The information contains the datum name, distance units and encoding method, which provide the definition for the system. This table also stores the characteristics of the reference frame or system from which depths are measured. The additional information in the table are geometry reference data etc.

3.1.83.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.83.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
SpatialInfo	CollectionMetaData	0,n	1,1
AltitudeResolution	SpatialInfo	0,n	1,1
DepthResolution	SpatialInfo	0,n	1,1
PlanarCoordinateSystem	SpatialInfo	0,n	1,1

3.1.83.4 Attribute list of the entity SpatialInfo

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
SpatialCoverageType	A80	80		
AltitudeDatumName	VA80	80		
AltitudeDistanceUnits	VA80	80		
AltitudeEncodingMethod	VA2048	2048		
DepthDatumName	VA80	80		
DepthDistanceUnits	VA80	80		
DepthEncodingMethod	VA2048	2048		
DenominatorofFlatteningRatio	N			
EllipsoidName	VA255	255		
HorizontalDatumName	VA80	80		
SemiMajorAxis	N			
GeographicCoordinateUnits	VA80	80		
LatitudeResolution	N			
LongitudeResolution	N			
LocalCoordinateSystemDesc	VA2048	2048		
LocalGeoReferenceInformation	VA2048	2048		

3.1.83.5 Attribute SpatialCoverageType

3.1.83.5.1 Description

This attribute denotes whether the locality/coverage requires horizontal, vertical, or both in the spatial domain and coordinate system definitions.

3.1.83.6 Attribute AltitudeDatumName

3.1.83.6.1 Description

The identification given to the level surface taken as the surface of reference from which altitudes are measured.

3.1.83.7 Attribute AltitudeDistanceUnits**3.1.83.7.1 Description**

Units in which altitudes are recorded.

3.1.83.8 Attribute AltitudeEncodingMethod**3.1.83.8.1 Description**

The means used to encode the altitudes.

3.1.83.9 Attribute DepthDatumName**3.1.83.9.1 Description**

The identification given to surface of reference from which depths are measured.

3.1.83.10 Attribute DepthDistanceUnits**3.1.83.10.1 Description**

Units in which depths are recorded.

3.1.83.11 Attribute DepthEncodingMethod**3.1.83.11.1 Description**

The means used to encode depths.

3.1.83.12 Attribute DenominatorofFlatteningRatio**3.1.83.12.1 Description**

The ratios of the Earth's major axis to the difference between the major and the minor.

3.1.83.13 Attribute EllipsoidName**3.1.83.13.1 Description**

Identification given to established representation of the Earth's shape.

3.1.83.14 Attribute HorizontalDatumName**3.1.83.14.1 Description**

The identification given to the reference system used for defining the coordinates of points.

3.1.83.15 Attribute SemiMajorAxis**3.1.83.15.1 Description**

Radius of the equatorial axis of the ellipsoid.

3.1.83.16 Attribute GeographicCoordinateUnits**3.1.83.16.1 Description**

Units of measure used for the geodetic latitude and longitude resolution values. For lat, a 2 digit decimal number from 0-90; for lon, a 3 digit decimal number from 0-180. + or absence of - for values north of equator or values west of prime meridian; - for all others.

3.1.83.17 Attribute LatitudeResolution**3.1.83.17.1 Description**

The minimum difference between two adjacent latitude values expressed in Geographic

3.1.83.18 Attribute LongitudeResolution**3.1.83.18.1 Description**

The minimum difference between two adjacent longitude values expressed in Geographic Coordinate Units of measure.

3.1.83.19 Attribute LocalCoordinateSystemDesc**3.1.83.19.1 Description**

This class contains a description of the coordinate system and geo-reference information.

3.1.83.20 Attribute LocalGeoReferencelInformation

3.1.83.20.1 Description

A description of the information provided to register the local system to the Earth (e.g. control points, satellite ephemeral data, inertial navigation data).

3.1.84 Entity SpatialKeyword

3.1.84.1 Description

This entity contains the spatial keywords associated with the collection.

3.1.84.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.84.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
SpatialKeyword	CollectionMetaData	0,n	1,1

3.1.84.4 Attribute list of the entity SpatialKeyword

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
SpatialKeyword	VA80	80	X	

3.1.84.5 Attribute SpatialKeyword

3.1.84.5.1 Description

This attribute specifies a word or phrase which serves to summarize the spatial regions covered by the collection. It may be repeated if several regions are covered. This often occurs when a collection is described as covering some large region, and several smaller sub-regions within that region.

3.1.85 Entity StorageMedium

3.1.85.1 Description

This entity contains the medium on which the data are stored.

3.1.85.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.85.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
StorageMedium	CollectionMetaData	0,n	1,1

3.1.85.4 Attribute list of the entity StorageMedium

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
StorageMedium	VA30	30	X	

3.1.85.5 Attribute StorageMedium

3.1.85.5.1 Description

The quantity and type of medium on which the distributed data are stored.

3.1.86 Entity StorageMediumClass

3.1.86.1 Description

This entity contains the medium on which the granule data are stored.

3.1.86.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.86.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
StorageMediumClass	GranuleURMetaData	0,n	1,1

3.1.86.4 Attribute list of the entity StorageMediumClass

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
StorageMedium	VA30	30	X	

3.1.86.5 Attribute StorageMedium

3.1.86.5.1 Description

The quantity and type of medium on which the distributed data are stored.

3.1.87 Entity Temporal

3.1.87.1 Description

This entity contains records, which describe the basis of the time system used for a specific collection.

3.1.87.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.87.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
Temporal	CollectionMetaData	0,1	1,1
SingleDateTime	Temporal	0,n	1,1
RangeDateTime	Temporal	0,n	1,1
PeriodicDateTime	Temporal	0,n	1,1

3.1.87.4 Attribute list of the entity Temporal

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
TimeType	VA80	80		
DateType	VA80	80		
TemporalRangeType	VA80	80	X	
PrecisionofSeconds	N38	38		
EndsatPresentFlag	A1	1		

3.1.87.5 Attribute TimeType

3.1.87.5.1 Description

This attribute provides the time system which the values found in temporal subclasses represent.

3.1.87.6 Attribute DateType

3.1.87.6.1 Description

This attribute specifies the type of date represented by the value in the date attributes of the temporal subclasses.

3.1.87.7 Attribute TemporalRangeType

3.1.87.7.1 Description

This attribute tells the system and ultimately the end user how temporal coverage is specified for the collection.

3.1.87.8 Attribute PrecisionofSeconds

3.1.87.8.1 Description

The precision (position in number of places to right of decimal point) of seconds used in measurement.

3.1.87.9 Attribute EndsatPresentFlag

3.1.87.9.1 Description

This attribute will denote that a data collection which covers, temporally, a discontinuous range, currently ends at the present date. This way, the granules, which comprise the data collection, that are continuously being added to inventory need not update the data collection metadata for each one.

3.1.88 Entity TemporalKeyword

3.1.88.1 Description

This entity contains information of the type of temporal characterization for a collection.

3.1.88.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.88.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
TemporalKeyword	CollectionMetaData	0,n	1,1

3.1.88.4 Attribute list of the entity TemporalKeyword

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>
TemporalKeyword	VA80	80	X	

3.1.88.5 Attribute TemporalKeyword

3.1.88.5.1 Description

This attribute specifies a word or phrase which serves to summarize the temporal characteristics referenced in the collection.

3.1.89 Entity VersionHistory

3.1.89.1 Description

This entity holds granule version history information.

3.1.89.2 Annotation

Adopted from Release B Science Data Processing Segment (SDPS) for the ECS Project. Refer to 311-CD-008-001 May 15, 1996.

3.1.89.3 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
VersionHistory	GranuleURMetaData	0,n	1,1

3.1.89.4 Attribute list of the entity VersionHistory

<i>Name</i>	<i>Data Type</i>	<i>Length</i>	<i>Mandatory</i>	<i>Primary Identifier</i>

PreviousGranuleID	VA80	80		
PreviousVersion	VA80	80		

3.1.89.5 Attribute PreviousGranuleID**3.1.89.5.1 Description**

The identification of the granuleUR in previous version provided by the data provider.

3.1.89.6 Attribute PreviousVersion**3.1.89.6.1 Description**

The version number of the granule in previous version provided by the data provider.

4 Model level object lists**4.1 Data item list**

<i>Name</i>	<i>Data Type</i>	<i>Length</i>
VerticalSpatialDomainValue	VA80	80
VerticalSpatialDomainType	VA80	80
NUMBER_OF_SENSORS	N	
INSTRUMENT_TECHNIQUE	VA2048	2048
INSTRUMENT_SHORT_NAME	VA80	80
OperationMode	VA20	20
NumberOfSensors	N	
InstrumentTechnique	VA2048	2048
InstrumentShortName	N	
AutomaticQualityFlagExplanation	VA2048	2048
OperationalQualityFlagExplanation	VA2048	2048
AutomaticQualityFlag	VA80	80
ScienceQualityFlagExplanation	VA2048	2048
OperationalQualityFlag	VA80	80
ScienceQualityFlag	VA80	80
QAPercentCloudCover	N	
QAPercentInterpolatedData	N	
QAPercentOutofBoundsData	N	
QAPercentMissingData	N	
PGEVersion	A10	10
PGEName	VA1024	1024
LocalVersionID	VA80	80
ProducerGranuleID	VA80	80
ProductionDateTime	DT	
DayNightFlag	VA5	5
ReprocessingPlanned	VA80	80
ReprocessingActual	VA80	80
ATTRIBUTE_ID	N	
AdditionalAttributeDataType	VA80	80
AdditionalAttributeDescription	VA2048	2048
AdditionalAttributeName	VA80	80
MeasurementResolution	VA80	80
ParameterUnitsOfMeasure	VA80	80
ParameterRangeBegin	VA80	80
ParameterRangeEnd	VA80	80
ParameterValueAccuracy	VA80	80
ValueAccuracyExplanation	VA2048	2048
AltitudeResolution	N	
BROWSE_ID	N	
BrowseGranuleId	VA1024	1024
InternalFileName	VA1024	1024
BrowseURL	VA1024	1024
BrowseDescription	VA4000	4000
BrowseSize	N	
LastUpdate	DT	
InsertTime	DT	
BrowseECHOLastUpdate	DT	
CampaignShortName	VA40	40
CampaignLongName	VA80	80

CampaignStartDate	DT	
CampaignEndDate	DT	
ECHOItemID(R)	VA250	250
DataSetID	VA500	500
ShortName	VA80	80
LongName	VA1024	1024
CollectionDescription	VA4000	4000
VersionID	N5,2	5
VersionDescription	VA2048	2048
RevisionDate	DT	
SuggestedUsage	VA4000	4000
ProcessingCenter	VA80	80
ArchiveCenter	VA80	80
CitationforExternalPublication	VA4000	4000
CollectionState	VA80	80
MaintenanceandUpdateFrequency	VA80	80
ProcessingLevelId	VA80	80
ProcessingLevelDescription	VA2048	2048
Price	N9,2	9
TotalGranules(R)	N	
SizeMBTotalGranules(R)	N	
PriceTotalGranules(R)	N	
InsertTime	DT	
LastUpdate	DT	
DeleteTime	DT	
ECHOLastUpdate(R)	DT	
ECHOInsertDate(R)	DT	
Orderable	A1	1
DataFormat	VA80	80
RestrictionFlag	N	
RestrictionComment	VA1024	1024
AssociatedShortName	A80	80
AssociatedVersionId	N3	3
CollectionType	VA80	80
CollectionUse	VA4000	4000
OnlineResourceURL	VA255	255
OnlineResourceType	VA50	50
OnlineResourceMimeType	VA50	50
OnlineResourceDescription	VA2048	2048
URL	VA500	500
MimeType	VA50	50
URLDescription	VA4000	4000
PlanarCoordinateSystemID	VA80	80
PlanarCoordinateEncodingMet	VA80	80
PlanarDistanceUnits	VA80	80
BearingReferenceDirection	VA20	20
BearingReferenceMeridian	VA2048	2048
BearingResolution	N	
BearingUnits	VA255	255
DistanceResolution	N	
AbscissaResolution	N	

OrdinateResolution	N	
MapProjectionName	VA80	80
MapProjectionPointer	VA255	255
LocalPlanarCoordinateSystem	VA1024	1024
LocalPlanarGeoReferenceInfo	VA1024	1024
GridCoordinateSystemName	VA255	255
RangeBeginningDate	DT	
RangeEndingDate	DT	
RangeBeginningTime	VA20	20
RangeEndingTime	VA20	20
PeriodName	VA30	30
Period1stDate	DT	
Period1stTime	VA20	20
PeriodDurationUnit	VA15	15
PeriodDurationValue	F	
PeriodCycleDurationUnit	VA15	15
PeriodCycleDurationValue	N	
ScienceReviewDate	DT	
ScienceReviewStatus	VA20	20
FutureReviewDate	DT	
TimeOfDay	VA20	20
CalendarDate	DT	
SpatialCoverageType	A80	80
AltitudeDatumName	VA80	80
AltitudeDistanceUnits	VA80	80
AltitudeEncodingMethod	VA2048	2048
DepthDatumName	VA80	80
DepthDistanceUnits	VA80	80
DepthEncodingMethod	VA2048	2048
DenominatorofFlatteningRatio	N	
EllipsoidName	VA255	255
HorizontalDatumName	VA80	80
SemiMajorAxis	N	
GeographicCoordinateUnits	VA80	80
LatitudeResolution	N	
LongitudeResolution	N	
LocalCoordinateSystemDesc	VA2048	2048
LocalGeoReferenceInformation	VA2048	2048
SpatialKeyword	VA80	80
TimeType	VA80	80
DateType	VA80	80
TemporalRangeType	VA80	80
PrecisionofSeconds	N38	38
EndsatPresentFlag	A1	1
TemporalKeyword	VA80	80
CONTACT_ID	N	
Role	VA80	80
HoursOfService	VA1024	1024
ContactInstructions	VA2048	2048
ContactOrganizationName	VA200	200
StreetAddress	VA1024	1024

City	VA80	80
StateProvince	VA30	30
PostalCode	VA20	20
Country	VA10	10
ContactFirstName	VA255	255
ContactMiddleName	VA255	255
ContactLastName	VA255	255
ContactJobPosition	VA255	255
PrimaryCSDT	VA80	80
Implementation	VA1024	1024
CSDTComments	VA2048	2048
IndirectReference	VA1024	1024
DepthResolution	N	
DISCIPLINE_KEYWORD_ID	N	
DisciplineKeyword	VA500	500
TopicKeyword	VA500	500
TermKeyword	VA500	500
VariableKeyword	VA500	500
COLLECTION_ID	N	
SOURCE_ID	N	
DISCIPLINE_KEYWORD_ID	N	
ParameterKeyword	VA255	255
ElectronicMailAddress	VA1024	1024
GRANULE_ID	N	
ECHOItemId	N	
GranuleUR	VA250	250
GranuleVersionID	N5,2	5
RangeBeginningDate	DT	
RangeBeginningTime	VA20	20
RangeEndingDate	DT	
RangeEndingTime	VA20	20
CalendarDate	DT	
TimeOfDay	VA20	20
ZoneIdentifier	VA80	80
Price	N9,2	9
Global	A1	1
InsertTime	DT	
LastUpdate	DT	
DeleteTime	DT	
ECHOInsertDate	DT	
ECHOLastUpdate	DT	
Orderable	A1	1
DataFormat	VA80	80
RestrictionFlag	N	
RestrictionComment	VA1024	1024
FileName	VA1024	1024
FileSize	N	
CreationDate	DT	
InputPointer	VA255	255
LocalityValue	VA1024	1024
ParameterName	VA250	250

URL	VA500	500
MimeType	VA50	50
URLDescription	VA4000	4000
EquatorCrossingLongitude	N	
OrbitalModelName	VA80	80
OrbitNumber	N38	38
StartOrbitNumber	N	
StopOrbitNumber	N	
EquatorCrossingDate	DT	
EquatorCrossingTime	VA20	20
AdditionalAttributeName	VA80	80
AdditionalAttributeValue	VA500	500
AdditionalAttributeValueType	VA20	20
ScienceReviewDate	DT	
ScienceReviewStatus	VA20	20
FutureReviewDate	DT	
SensorCharacteristicName	VA80	80
SensorCharacteristicValue	VA80	80
VerticalSpatialDomainValue	VA80	80
VerticalSpatialDomainType	VA80	80
InstrumentShortName	VA80	80
InstrumentTechnique	VA1024	1024
InstrumentCharacteristicName	VA80	80
InstrumentCharacteristicValue	VA80	80
InstrumentCharacteristicUnit	VA20	20
InstrumentCharacteristicDataType	A80	80
InstrumentCharacteristicDescription	VA2048	2048
OperationMode	VA20	20
GridStartX	N	
GridEndX	N	
GridStartY	N	
GridEndY	N	
GridType	VA80	80
PLATFORM_ID	N	
PlatformShortName	VA80	80
PlatformLongName	VA1024	1024
PlatformType	VA80	80
PlatformCharacteristicName	VA80	80
PlatformCharacteristicValue	VA80	80
PlatformCharacteristicUnit	VA20	20
PlatformCharacteristicDataType	VA80	80
PlatformCharacteristicDescription	VA2048	2048
PLATFORM_SHORT_NAME	VA80	80
SYS_ID	N	
DATA_CENTER_ID	VA80	80
DATE_FORMAT	VA40	40
CLOUD_COVER_NAME	VA40	40
SCHEMA_VERSION	VA10	10
DEFAULT_COLL_ORDERABLE	A1	1
DEFAULT_GR_ORDERABLE	A1	1
DEFAULT_COLL_SP REP	VA50	50

DEFAULT_GR_SP REP	VA50	50
DEFAULT_PKGID	N	
SensorShortName	VA80	80
SensorLongName	VA1024	1024
SensorCharacteristicName	VA80	80
SensorCharacteristicValue	VA80	80
SensorCharacteristicUnit	VA20	20
SensorCharacteristicDataType	A80	80
SensorCharacteristicDescription	VA2048	2048
TelephoneNumber	VA23	23
TelephoneType	VA30	30
SOURCE_ID	N	
AscendingCrossing	N	
NumberOfOrbit	N	
StartLat	N	
StartDirection	A1	1
EndLat	N	
EndDirection	A1	1
Period	N	
InclinationAngle	N	
SwathWidth	N	
OnlineResourceURL	VA1024	1024
OnlineResourceType	VA50	50
OnlineResourceMimeType	VA50	50
OnlineResourceDescription	VA2048	2048
SensorShortName	VA80	80
SensorTechnique	VA2048	2048
InstrumentCharacteristicName	VA1024	1024
InstrumentCharacteristicDescription	VA1024	1024
SensorShortName	VA80	80
SensorTechnique	VA2048	2048
EntryID	VA1024	1024
AP_ID	N	
AlgorithmPackageName	VA80	80
AlgorithmPackageVersion	VA20	20
AlgorithmPackageMaturityCode	A20	20
AlgorithmPackageAcceptDate	DT	
DeliveryPurpose	VA1024	1024
PGEName	VA80	80
PGEVersion	VA20	20
PGEIdentifier	VA80	80
PGEFunction	VA1024	1024
PGEDateLastModified	DT	
SWVersion	VA12	12
SWDateLastModified	DT	
MAPPING_NAME	VA80	80
ADDITIONAL_ATTRIBUTE_NAME	VA80	80
StorageMedium	VA30	30
LocalityType	VA20	20
LocalityDescription	VA255	255
QAGranuleId	VA80	80

PreviousGranuleID	VA80	80
PreviousVersion	VA80	80
PHGranuleId	VA80	80
StorageMedium	VA30	30
ProcessingQAAttribute)	VA1024	1024
ProcessingQADescription	VA2048	2048
AnalysisType	VA80	80
AnalysisShortName	VA80	80
AnalysisLongName	VA1024	1024
AnalysisTechnique	VA1024	1024
SSAP_ID	N	
ComponentType	VA50	50
ComponentName	VA50	50
SSAPAlgorithmPackageName	VA50	50
SSAPIInsertDate	VA40	40
CenterLatitude	N	
CenterLongitude	N	
Radius	N	
SizeMBDataGranule	N	
PlatformShortName	VA80	80
CatalogItemId	?	
Global	BL	
PointLongitude	N	
PointLatitude	N	
LinePoints	?	
WestBoundingCoordinate	N	
NorthBoundingCoordinate	N	
EastBoundingCoordinate	N	
SouthBoundingCoordinate	N	
Points	?	
Points	?	
ShortName	VA80	80
Version	N	
DatasetID	VA1030	1030
GranuleUR	VA80	80
BrowseGranuleId	?	
BrowseGranuleId	?	
SpatialCoverageType	?	
ZoneIdentifier	?	
Global	?	
GranuleSpatialRepresentation	?	
GranuleSpatialInheritance	?	
CatalogItemId(R)	?	
GridType	VA80	80

4.2 Relationship list

<i>Entity 2</i>	<i>Entity 1</i>	<i>Entity 2 -> Entity 1 Role Cardinality</i>	<i>Entity 1 -> Entity 2 Role Cardinality</i>
AltitudeResolution	SpatialInfo	0,n	1,1
CollectionAssociation	CollectionMetaData	0,n	1,1
DisciplineTopicParameters	CollectionMetaData	0,n	1,1
DisciplineTopicParameters	DisciplineKeyword	0,n	1,1
CollectionOnlineResources	CollectionMetaData	0,n	1,1
CollectionOnlineAccessURLs	CollectionMetaData	0,n	1,1
CollReview	CollectionMetaData	0,n	1,1
SpatialInfo	CollectionMetaData	0,n	1,1
SpatialKeyword	CollectionMetaData	0,n	1,1
Temporal	CollectionMetaData	0,1	1,1
TemporalKeyword	CollectionMetaData	0,n	1,1
ContactOrganizationAddress	Contact	0,n	1,1
ContactPersons	Contact	0,n	1,1
CSDTDescription	CollectionMetaData	0,n	1,1
DepthResolution	SpatialInfo	0,n	1,1
OrganizationEmail	Contact	0,n	1,1
FileStorage	GranuleURMetaData	0,n	1,1
InputGranule	GranuleURMetaData	0,n	1,1
MeasuredParameter	GranuleURMetaData	0,n	1,1
OnlineAccessURLs	GranuleURMetaData	0,n	1,1
OrbitCalculatedSpatialDomain	GranuleURMetaData	0,n	1,1
GranuleAdditionalAttributes	GranuleURMetaData	0,n	1,1
Review	GranuleURMetaData	0,n	1,1
Grid	GranuleURMetaData	0,n	1,1
PlatformCharacteristic	Platform	0,n	1,1
OrganizationTelephone	Contact	0,n	1,1
CollectionPlatform	CollectionMetaData	0,n	1,1
GranulePlatform	GranuleURMetaData	0,n	1,1
GranuleOnlineResources	GranuleURMetaData	0,n	1,1
ParameterKeyword	DisciplineTopicParameters	0,n	1,1
AssociatedDIFs	CollectionMetaData	0,n	1,1
GranulePlatformInstrumentSensor	Sensor	0,n	1,1
CollectionPlatformInstrumentSensor	Sensor	0,n	1,1
GranuleAdditionalAttributes	AdditionalAttributes	0,n	1,1
CollectionPlatform	Platform	0,n	1,1
GranulePlatform	Platform	0,n	1,1
GranuleSensorCharacteristic	GranulePlatformInstrumentSensor	0,n	1,1
CollectionSensorCharacteristic	CollectionPlatformInstrumentSensor	0,n	1,1
StorageMedium	CollectionMetaData	0,n	1,1
CollectionLocality	CollectionMetaData	0,n	1,1
QAProduct	GranuleURMetaData	0,n	1,1
VersionHistory	GranuleURMetaData	0,n	1,1
PHProduct	GranuleURMetaData	0,n	1,1
StorageMediumClass	GranuleURMetaData	0,n	1,1
ProcessingQA	GranuleURMetaData	0,n	1,1
GranuleURMetaData	Campaign	0,n	0,n
CollectionMetaData	Campaign	0,n	0,n

DataGranule	GranuleURMetaData	0,1	1,1
AalysisSource	GranuleURMetaData	0,n	0,n
AalysisSource	CollectionMetaData	0,n	0,n
PGEVersionClass	GranuleURMetaData	0,n	1,1
AdditionalAttributes	CollectionMetaData	0,n	0,n
QAStats	MeasuredParameter	0,n	1,1
QAFlags	MeasuredParameter	0,n	1,1
Contact	GranuleURMetaData	0,n	0,n
GranulePlatformInstrument	GranulePlatform	0,n	1,1
Instrument	GranulePlatformInstrument	1,1	0,1
GranuleInstrumentCharacteristic	GranulePlatformInstrument	0,n	1,1
GranulePlatformInstrumentSensor	GranulePlatformInstrument	0,n	1,1
Contact	CollectionMetaData	0,n	0,n
Contact	AlgorithmPackage	0,n	0,n
GranuleLocality	GranuleSpatialDomain	0,n	1,1
GranuleVerticalSpatialDomain	GranuleSpatialDomain	0,n	1,1
GranuleHorizontalSpatialDomain	GranuleSpatialDomain	0,1	1,1
GranuleSpatialDomain	GranuleURMetaData	0,1	1,1
Orbit	GranuleHorizontalSpatialDomain	0,1	1,1
GranuleHorizontalSpatialDomainGlobal	GranuleHorizontalSpatialDomain	0,1	1,1
HorizontalSpatial	GranuleHorizontalSpatialDomain	0,n	1,1
Circle	HorizontalSpatial	0,1	1,1
Point	HorizontalSpatial	0,1	1,1
Line	HorizontalSpatial	0,1	1,1
BoundingRectangle	HorizontalSpatial	0,1	1,1
Polygon	HorizontalSpatial	0,1	1,1
OuterRing	Polygon	0,n	1,1
OuterRing	InnerRing	0,n	1,1
SingleDateTime	Temporal	0,n	1,1
RangeDateTime	Temporal	0,n	1,1
PeriodicDateTime	Temporal	0,n	1,1
SSAPComponent	AlgorithmPackage	0,n	0,1
AlgorithmPackage	CollectionMetaData	0,n	0,1
CollectionInstrumentOperationMode	CollectionPlatformInstrument	0,n	1,1
CollectionInstrumentCharacteristic	CollectionPlatformInstrument	0,n	1,1
CollectionPlatformInstrumentSensor	CollectionPlatformInstrument	0,n	1,1
CollectionPlatformInstrument	CollectionPlatform	0,n	1,1
DisciplineTopicParameters	CollectionPlatformInstrument	0,n	1,1
Instrument	CollectionPlatformInstrument	1,1	0,n
CollectionSpatial	CollectionMetaData	0,n	1,1
CollectionVerticalSpatialDomain	CollectionSpatial	0,n	1,1
HorizontalSpatial	CollectionHorizontalSpatialDomain	0,n	1,1
CollectionHorizontalSpatialDomain	CollectionSpatial	0,n	1,1
OrbitParameters	CollectionSpatial	0,n	1,1
GranuleSpatialRepresentation	CollectionSpatial	0,1	1,1
GranuleSpatialInheritance	CollectionSpatial	0,1	1,1
PlanarCoordinateSystem	SpatialInfo	0,n	1,1

5 Association CollectionBrowseReference

5.1 Description of association CollectionBrowseReference

This entity holds cross reference between collections and browses. The collection metadata and browse metadata are independently maintained. The association between those two entities built when the information is complete. This metadata information is ignored by current ECHO ingest.

5.2 Link list of association CollectionBrowseReference

<i>Entity</i>	<i>Role</i>	<i>Cardinality of role</i>
CollectionMetaData		0,n
BrowseCrossReference		0,n

5.3 Attribute list of association CollectionBrowseReference

<i>Name</i>	<i>Code</i>	<i>Data Type</i>	<i>Mandatory</i>
BrowseGranuleId	BROWSEGRANULEID	?	

5.4 Attribute BrowseGranuleId of association CollectionBrowseReference

5.4.1 Description of attribute BrowseGranuleId of association CollectionBrowseReference

Browse' unique file name. This is unique per provider.

6 Association CollectionGridPSAMapping

6.1 Description of association CollectionGridPSAMapping

This entity holds cross reference between collection and collection Grid system metadata. The collection metadata and collection grid metadata are independently maintained. The association between those two entities built when the information is complete.

6.2 Link list of association CollectionGridPSAMapping

<i>Entity</i>	<i>Role</i>	<i>Cardinality of role</i>
CollectionAttributeMapping		1,n
CollectionMetaData		0,1

6.3 Attribute list of association CollectionGridPSAMapping

<i>Name</i>	<i>Code</i>	<i>Data Type</i>	<i>Mandatory</i>
GridType	GRID_TYPE	VA80	

6.4 Attribute GridType of association CollectionGridPSAMapping

6.4.1 Description of attribute GridType of association CollectionGridPSAMapping

Type of the Grid such as "WRS-2".

7 Association GranuleBrowseReference

7.1 Description of association GranuleBrowseReference

This entity stores cross reference between granules and browses. The granule metadata and browse metadata are independently maintained. The association between those two entities built when the information is complete.

7.2 Link list of association GranuleBrowseReference

<i>Entity</i>	<i>Role</i>	<i>Cardinality of role</i>
GranuleURMetaData		0,n
BrowseCrossReference		0,n

7.3 Attribute list of association GranuleBrowseReference

<i>Name</i>	<i>Code</i>	<i>Data Type</i>	<i>Mandatory</i>
GranuleUR	GRANULEUR	VA80	
BrowseGranuleId	BROWSEGRANULEID	?	

7.4 Attribute BrowseGranuleId of association GranuleBrowseReference

7.4.1 Description of attribute BrowseGranuleId of association GranuleBrowseReference

Unique file name for the browse. This name is unique per data provider.

7.5 Attribute GranuleUR of association GranuleBrowseReference

8 Association GranuleCollectionMetaData

8.1 Description of association GranuleCollectionMetaData

This entity holds the reference information from a granule to a collection. Granule references collection either by collection short name and collection version or by collection dataset ID. The granule metadata and collection metadata are independently maintained. The association between those two entities built when the information is complete.

8.2 Link list of association GranuleCollectionMetaData

<i>Entity</i>	<i>Role</i>	<i>Cardinality of role</i>
GranuleURMetaData		1,1
CollectionMetaData		0,n

8.3 Attribute list of association GranuleCollectionMetaData

<i>Name</i>	<i>Code</i>	<i>Data Type</i>	<i>Mandatory</i>
ShortName	SHORTNAME	VA80	
Version	VERSION	N	
DatasetID	DATASETID	VA1030	

8.4 Attribute DatasetID of association GranuleCollectionMetaData

8.4.1 Description of attribute DatasetID of association GranuleCollectionMetaData

Specifies an alternative unique name for the collection.

8.5 Attribute ShortName of association GranuleCollectionMetaData

8.5.1 Description of attribute ShortName of association GranuleCollectionMetaData

This name will identify the short name associated with the collection. This is the official reference name used in identifying the contents of the data collection.

Together with collection's version ID, it forms an unique identifier for the collection per provider.

8.6 Attribute Version of association GranuleCollectionMetaData

8.6.1 Description of attribute Version of association GranuleCollectionMetaData

Version identifier of the data collection.

Together with collection's short name, it forms an unique identifier for the collection per provider.